49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

LEXISNEXIS' CODE OF FEDERAL REGULATIONS > Title 49 Transportation > Subtitle B — Other Regulations Relating to Transportation > Chapter I — Pipeline and Hazardous Materials Safety Administration, Department of Transportation > Subchapter C — Hazardous Materials Regulations > Part 171 — General Information, Regulations, and Definitions

Part 171 — General Information, Regulations, and Definitions

Statutory Authority

AUTHORITY NOTE APPLICABLE TO ENTIRE PART:

49 U.S.C. 5101-5128, 44701; Pub. L. 101-410 section 4; Pub. L. 104-134, section 31001; Pub. L. 114-74 section 701 (28 U.S.C. 2461 note); 49 CFR 1.81 and 1.97.

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CANATEX COMPLETIONS
EXHIBIT 2034

49 CFR 171.1

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.1 Applicability of Hazardous Materials Regulations (HMR) to persons and functions.

Federal hazardous materials transportation law (49 U.S.C. 5101 et seq.) directs the Secretary of Transportation to establish regulations for the safe and secure transportation of hazardous materials in commerce, as the Secretary considers appropriate. The Secretary is authorized to apply these regulations to persons who transport hazardous materials in commerce. In addition, the law authorizes the Secretary to apply these regulations to persons who cause hazardous materials to be transported in commerce. The law also authorizes the Secretary to apply these regulations to persons who manufacture or maintain a packaging or a component of a packaging that is represented, marked, certified, or sold as qualified for use in the transportation of a hazardous material in commerce. Federal hazardous material transportation law also applies to anyone who indicates by marking or other means that a hazardous material being transported in commerce is present in a package or transport conveyance when it is not, and to anyone who tampers with a package or transport conveyance used to transport hazardous materials in commerce or a required marking, label, placard, or shipping description. Regulations prescribed in accordance with Federal hazardous materials transportation law shall govern safety aspects, including security, of the transportation of hazardous materials that the Secretary considers appropriate. In 49 CFR 1.53, the Secretary delegated authority to issue regulations for the safe and secure transportation of hazardous materials in commerce to the Pipeline and Hazardous Materials Safety Administrator. The Administrator issues the Hazardous Materials Regulations (HMR; 49 CFR Parts 171 through 180) under that delegated authority. This section addresses the applicability of the HMR to packagings represented as qualified for use in the transportation of hazardous materials in commerce and to pre-transportation and transportation functions.

(a) Packagings. Requirements in the HMR apply to each person who manufactures, fabricates, marks, maintains, reconditions, repairs, or tests a packaging or a component of a packaging that is represented, marked, certified, or sold as qualified for use in the transportation of a hazardous material in commerce, including each person under contract with any department, agency, or instrumentality of the executive, legislative, or judicial branch of the Federal government who manufactures, fabricates, marks, maintains, reconditions, repairs, or tests a packaging or a component of a packaging that is represented, marked, certified, or sold as qualified for use in the transportation of a hazardous material in commerce.

(b) Pre-transportation functions. Requirements in the HMR apply to each person who offers a hazardous material for transportation in commerce, causes a hazardous material to be transported in commerce, or transports a hazardous material in commerce and who performs or is responsible for performing a pre-transportation function, including each person performing pre-transportation functions under contract with any department, agency, or instrumentality of the executive, legislative, or judicial branch of the Federal government. Pre-transportation functions include, but are not limited to, the following:

(1) Determining the hazard class of a hazardous material.

(2) Selecting a hazardous materials packaging.

(3) Filling a hazardous materials packaging, including a bulk packaging.

(4) Securing a closure on a filled or partially filled hazardous materials package or container or on a package or container containing a residue of a hazardous material.

(5) Marking a package to indicate that it contains a hazardous material.

(6) Labeling a package to indicate that it contains a hazardous material.

(7) Preparing a shipping paper.

(8) Providing and maintaining emergency response information.

(9) Reviewing a shipping paper to verify compliance with the HMR or international equivalents.

(10) For each person importing a hazardous material into the United States, providing the shipper with timely and complete information as to the HMR requirements that will apply to the transportation of the material within the United States.

(11) Certifying that a hazardous material is in proper condition for transportation in conformance with the requirements of the HMR.

(12) Loading, blocking, and bracing a hazardous materials package in a freight container or transport vehicle.

(13) Segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo.

(14) Selecting, providing, or affixing placards for a freight container or transport vehicle to indicate that it contains a hazardous material.

(c) Transportation functions. Requirements in the HMR apply to transportation of a hazardous material in commerce and to each person who transports a hazardous material in commerce, including each person under contract with any department, agency, or instrumentality of the executive, legislative, or judicial branch of the Federal government who transports a hazardous material in commerce. Transportation of a hazardous material in commerce begins when a carrier takes physical possession of the hazardous material for the purpose of transporting it and continues until the package containing the hazardous material is delivered to the destination indicated on a shipping document, package marking, or other medium, or, in the case of a rail car, until the car is delivered to a private track or siding. For a private motor carrier, transportation of a hazardous material in commerce begins when a motor vehicle driver takes possession of a hazardous material for the purpose of transporting it and continues until the driver relinquishes possession of the package containing the hazardous material at its destination and is no longer responsible for performing functions subject to the HMR with respect to that particular package. Transportation of a hazardous material in commerce includes the following:

(1) Movement. Movement of a hazardous material by rail car, aircraft, motor vehicle, or vessel (except as delegated by Department of Homeland Security Delegation No. 0170 at 2(103)).

(2) Loading incidental to movement of a hazardous material. Loading of packaged or containerized hazardous material onto a transport vehicle, aircraft, or vessel for the purpose of transporting it, including blocking and bracing a hazardous materials package in a freight container or transport vehicle, and segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo, when performed by carrier personnel or in the presence of carrier personnel. For a bulk packaging, loading incidental to movement is filling the packaging with a hazardous material for the purpose of transporting it when performed by carrier personnel or in the presence of carrier personnel (except as delegated by Department of Homeland Security Delegation No. 0170 at 2(103)), including transloading.

(3) Unloading incidental to movement of a hazardous material. Removing a package or containerized hazardous material from a transport vehicle, aircraft, or vessel; or for a bulk packaging, emptying a hazardous material from the bulk packaging after the hazardous material has been delivered to the consignee when performed by carrier personnel or in the presence of carrier personnel or, in the case of a private motor carrier, while the driver of the motor vehicle from which the hazardous material is being unloaded immediately after movement is completed is present during the unloading operation. (Emptying a hazardous material from a bulk packaging while the packaging is on board a vessel is subject to separate regulations as delegated by Department of Homeland Security Delegation No. 0170 at 2(103).) Unloading incidental to movement includes transloading.

(4) Storage incidental to movement of a hazardous material. Storage of a transport vehicle, freight container, or package containing a hazardous material by any person between the time that a carrier takes physical possession of the hazardous material for the purpose of transporting it until the package containing the hazardous material has been delivered to the destination indicated on a shipping document, package marking, or other medium, or, in the case of a private motor carrier, between the time that a motor vehicle driver takes physical possession of the hazardous material for the purpose of transporting it until the driver relinquishes possession of the package at its destination and is no longer responsible for performing functions subject to the HMR with respect to that particular package.

(i) Storage incidental to movement includes —

(A) Storage at the destination shown on a shipping document, including storage at a transloading facility, provided the original shipping documentation identifies the shipment as a through-shipment and identifies the final destination or destinations of the hazardous material; and

(B) A rail car containing a hazardous material that is stored on track that does not meet the definition of “private track or siding” in § 171.8, even if the car has been delivered to the destination shown on the shipping document.

(ii) Storage incidental to movement does not include storage of a hazardous material at its final destination as shown on a shipping document.

(d) Functions not subject to the requirements of the HMR. The following are examples of activities to which the HMR do not apply:

(1) Storage of a freight container, transport vehicle, or package containing a hazardous material at an offeror facility prior to a carrier taking possession of the hazardous material for movement in transportation in commerce or, for a private motor carrier, prior to a motor vehicle driver taking physical possession of the hazardous material for movement in transportation in commerce.

(2) Unloading of a hazardous material from a transport vehicle or a bulk packaging performed by a person employed by or working under contract to the consignee following delivery of the hazardous material by the carrier to its destination and departure from the consignee’s premises of the carrier’s personnel or, in the case of a private carrier, departure of the driver from the unloading area.

(3) Storage of a freight container, transport vehicle, or package containing a hazardous material after its delivery by a carrier to the destination indicated on a shipping document, package marking, or other medium, or, in the case of a rail car, storage of a rail car on private track.

(4) Rail and motor vehicle movements of a hazardous material exclusively within a contiguous facility boundary where public access is restricted, except to the extent that the movement is on or crosses a public road or is on track that is part of the general railroad system of transportation, unless access to the public road is restricted by signals, lights, gates, or similar controls.

(5) Transportation of a hazardous material in a motor vehicle, aircraft, or vessel operated by a Federal, state, or local government employee solely for noncommercial Federal, state, or local government purposes.

(6) Transportation of a hazardous material by an individual for non-commercial purposes in a private motor vehicle, including a leased or rented motor vehicle.

(7) Any matter subject to the postal laws and regulations of the United States.

(e) Requirements of other Federal agencies. Each facility at which pre-transportation or transportation functions are performed in accordance with the HMR may be subject to applicable standards and regulations of other Federal agencies.

(f) Requirements of state and local government agencies.

(1) Under 49 U.S.C. 5125, a requirement of a state, political subdivision of a state, or an Indian tribe is preempted, unless otherwise authorized by another Federal statute or DOT issues a waiver of preemption, if—

(i) Complying with both the non-Federal requirement and Federal hazardous materials transportation law, the regulations issued under Federal hazardous material transportation law or a hazardous material transportation security regulation or directive issued by the Secretary of Homeland Security is not possible;

(ii) The non-Federal requirement, as applied or enforced, is an obstacle to accomplishing and carrying out Federal hazardous materials transportation law, the regulations issued under Federal hazardous material transportation law, or a hazardous material transportation security regulation or directive issued by the Secretary of Homeland Security;

(iii) The non-Federal requirement is not substantively the same as a provision of Federal hazardous materials transportation law, the regulations issued under Federal hazardous material transportation law, or a hazardous material transportation security regulation or directive issued by the Secretary of Homeland Security with respect to —

(A) The designation, description, and classification of hazardous material;

(B) The packing, repacking, handling, labeling, marking, and placarding of hazardous material;

(C) The preparation, execution, and use of shipping documents related to hazardous material and requirements related to the number, contents, and placement of those documents;

(D) The written notification, recording, and reporting of the unintentional release of hazardous material; or

(E) The design, manufacturing, fabricating, marking, maintenance, reconditioning, repairing, or testing of a package or container represented, marked, certified, or sold as qualified for use in transporting hazardous material.

(iv) A non-Federal designation, limitation or requirement on highway routes over which hazardous material may or may not be transported does not comply with the regulations in subparts C and D of part 397 of this title; or

(v) A fee related to the transportation of a hazardous material is not fair or is used for a purpose that is not related to transporting hazardous material, including enforcement and planning, developing, and maintaining a capability for emergency response.

(2) Subject to the limitations in paragraph (f)(1) of this section, each facility at which functions regulated under the HMR are performed may be subject to applicable laws and regulations of state and local governments and Indian tribes.

(3) The procedures for DOT to make administrative determinations of preemption are set forth in subpart E of part 397 of this title with respect to non-Federal requirements on highway routing (paragraph (f)(1)(iv) of this section) and in subpart C of part 107 of this chapter with respect to all other non-Federal requirements.

(g) Penalties for noncompliance. Each person who knowingly violates a requirement of the Federal hazardous material transportation law, an order issued under Federal hazardous material transportation law, subchapter A of this chapter, or a special permit or approval issued under subchapter A or C of this chapter is liable for a civil penalty of not more than $96,624 for each violation, except the maximum civil penalty is $225,455 if the violation results in death, serious illness, or severe injury to any person or substantial destruction of property. There is no minimum civil penalty, except for a minimum civil penalty of $582 for a violation relating to training.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[45 FR 34586, May 22, 1980, as amended by 48 FR 27690, June 16, 1983; 49 FR 10510, Mar. 20, 1984; 56 FR 8624, Feb. 28, 1991; 57 FR 52934, Nov. 5, 1992; 58 FR 6870, Feb. 2, 1993; 59 FR 49132, Sept. 26, 1994; 61 FR 21084, 21101, May 9, 1996, as confirmed at 61 FR 51235, Oct. 1, 1996; 62 FR 1208, 1215, Jan. 8, 1997; 62 FR 2970, 2977, Jan. 21, 1997; 62 FR 49560, 49566, Sept. 22, 1997; 65 FR 58614, 58618, Sept. 29, 2000; 66 FR 45376, 45378, Aug. 28, 2001; 68 FR 52844, 52856, Sept. 8, 2003; 68 FR 61906, 61937, Oct. 30, 2003, as corrected at 70 FR 20018, 20031, Apr. 15, 2005; 69 FR 30588, May 28, 2004; 69 FR 70902, Dec. 8, 2004; 70 FR 73156, 73162, Dec. 9, 2005; 71 FR 8485, 8488, Feb. 17, 2006; 71 FR 44929, 44931, Aug. 8, 2006; 74 FR 68701, 68702, Dec. 29, 2009; 75 FR 53593, 53596, Sept. 1, 2010; 78 FR 22798, 22800, Apr. 17, 2013; 81 FR 42266, 42268, June 29, 2016; 82 FR 18397, 18400, Apr. 19, 2017; 83 FR 60732, 60744, Nov. 27, 2018; 84 FR 37059, 37071, July 31, 2019; 86 FR 1745, 1756, Jan. 11, 2021; 86 FR 23241, 23252, May 3, 2021; 87 FR 15839, 15866, Mar. 21, 2022; 88 FR 1114, 1125, Jan. 6, 2023]

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§ 171.2 General requirements.

(a) Each person who performs a function covered by this subchapter must perform that function in accordance with this subchapter.

(b) Each person who offers a hazardous material for transportation in commerce must comply with all applicable requirements of this subchapter, an exemption or special permit, approval, or registration issued under this subchapter or under subchapter A of this chapter. There may be more than one offeror of a shipment of hazardous materials. Each offeror is responsible for complying with the requirements of this subchapter, or an exemption or special permit, approval, or registration issued under this subchapter or subchapter A of this chapter, with respect to any pre-transportation function that it performs or is required to perform; however, each offeror is responsible only for the specific pre-transportation functions that it performs or is required to perform, and each offeror may rely on information provided by another offeror, unless that offeror knows or, a reasonable person, acting in the circumstances and exercising reasonable care, would have knowledge that the information provided by the other offeror is incorrect.

(c) Each person who performs a function covered by or having an effect on a specification or activity prescribed in part 178, 179, or 180 of this subchapter, an approval issued under this subchapter, an exemption or special permit issued under subchapter A of this chapter, must perform the function in accordance with that specification, approval, an exemption or special permit, as appropriate.

(d) No person may offer or accept a hazardous material for transportation in commerce or transport a hazardous material in commerce unless that person is registered in conformance with subpart G of part 107 of this chapter, if applicable.

(e) No person may offer or accept a hazardous material for transportation in commerce unless the hazardous material is properly classed, described, packaged, marked, labeled, and in condition for shipment as required or authorized by applicable requirements of this subchapter an exemption or special permit, approval, or registration issued under this subchapter or subchapter A of this chapter.

(f) No person may transport a hazardous material in commerce unless the hazardous material is transported in accordance with applicable requirements of this subchapter, or an exemption or special permit, approval, or registration issued under this subchapter or subchapter A of this chapter. Each carrier who transports a hazardous material in commerce may rely on information provided by the offeror of the hazardous material or a prior carrier, unless the carrier knows or, a reasonable person, acting in the circumstances and exercising reasonable care, would have knowledge that the information provided by the offeror or prior carrier is incorrect.

(g) No person may represent, mark, certify, sell, or offer a packaging or container as meeting the requirements of this subchapter governing its use in the transportation of a hazardous material in commerce unless the packaging or container is manufactured, fabricated, marked, maintained, reconditioned, repaired, and retested in accordance with the applicable requirements of this subchapter. No person may represent, mark, certify, sell,

or offer a packaging or container as meeting the requirements of an exemption, a special permit, approval, or registration issued under this subchapter or subchapter A of this chapter unless the packaging or container is manufactured, fabricated, marked, maintained, reconditioned, repaired, and retested in accordance with the applicable requirements of the exemption, special permit, approval, or registration issued under this subchapter or subchapter A of this chapter. The requirements of this paragraph apply whether or not the packaging or container is used or to be used for the transportation of a hazardous material.

(h) The representations, markings, and certifications subject to the prohibitions of paragraph (g) of this section include:

(1) Specification identifications that include the letters “ICC”, “DOT”, “TC”, “CTC”, “CRC”, “BTC”, “MC”, or “UN”;

(2) Exemption, special permit, approval, and registration numbers that include the letters “DOT”, “EX”, “M”, or “R”; and

(3) Test dates associated with specification, registration, approval, retest, exemption, or special permit markings indicating compliance with a test or retest requirement of the HMR, or an exemption, special permit, approval, or registration issued under the HMR or under subchapter A of this chapter.

(i) No person may certify that a hazardous material is offered for transportation in commerce in accordance with the requirements of this subchapter unless the hazardous material is properly classed, described, packaged, marked, labeled, and in condition for shipment as required or authorized by applicable requirements of this subchapter an exemption or special permit, approval, or registration issued under this subchapter or subchapter A of this chapter. Each person who offers a package containing a hazardous material for transportation in commerce in accordance with the requirements of this subchapter an exemption or special permit, approval, or registration issued under this subchapter or subchapter A of this chapter, must assure that the package remains in condition for shipment until it is in the possession of the carrier.

(j) No person may, by marking or otherwise, represent that a container or package for transportation of a hazardous material is safe, certified, or in compliance with the requirements of this chapter unless it meets the requirements of all applicable regulations issued under Federal hazardous material transportation law.

(k) No person may, by marking or otherwise, represent that a hazardous material is present in a package, container, motor vehicle, rail car, aircraft, or vessel if the hazardous material is not present.

(l) No person may alter, remove, deface, destroy, or otherwise unlawfully tamper with any marking, label, placard, or description on a document required by Federal hazardous material transportation law or the regulations issued under Federal hazardous material transportation law. No person may alter, deface, destroy, or otherwise unlawfully tamper with a package, container, motor vehicle, rail car, aircraft, or vessel used for the transportation of hazardous materials.

(m) No person may falsify or alter an exemption or special permit, approval, registration, or other grant of authority issued under this subchapter or subchapter A of this chapter. No person may offer a hazardous material for transportation or transport a hazardous material in commerce under an exemption or special permit, approval, registration or other grant of authority issued under this subchapter or subchapter A of this chapter if such grant of authority has been altered without the consent of the issuing authority. No person may represent, mark, certify, or sell a packaging or container under an exemption or special permit, approval, registration or other grant of authority issued under this subchapter or subchapter A of this chapter if such grant of authority has been altered without the consent of the issuing authority.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[48 FR 2655, Jan. 20, 1983, as amended by 54 FR 25004, June 12, 1989; 56 FR 8624, Feb. 28, 1991; 57 FR 30631, July 9, 1992; 57 FR 37902, Aug. 21, 1992; 58 FR 33305, June 16, 1993; 59 FR 49132, Sept. 26, 1994; 61 FR 21084, 21101, May 9, 1996, as confirmed at 61 FR 51235, Oct. 1, 1996; 64 FR 10742, 10752, Mar. 5, 1999; 67 FR 51626, 51640, Aug. 8, 2002; 68 FR 61906, 61939, Oct. 30, 2003; 69 FR 30588, May 28, 2004; 69 FR 70902, Dec. 8, 2004; 70 FR 43638, 43643, July 28, 2005; 70 FR 73156, 73162, Dec. 9, 2005; 82 FR 15796, 15833, Mar. 30, 2017]

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§ 171.3 Hazardous waste.

(a) No person may offer for transportation or transport a hazardous waste (as defined in § 171.8 of this subchapter) in interstate or intrastate commerce except in accordance with the requirements of this subchapter.

(b) No person may accept for transportation, transport, or deliver a hazardous waste for which a manifest is required unless that person:

(1) Has marked each motor vehicle used to transport hazardous waste in accordance with § 390.21 of this title even though placards may not be required;

(2) Complies with the requirements for manifests set forth in § 172.205 of this subchapter; and

(3) Delivers, as designated on the manifest by the generator, the entire quantity of the waste received from the generator or a transporter to:

(i) The designated facility or, if not possible, to the designated alternate facility;

(ii) The designated subsequent carrier; or

(iii) A designated place outside the United States.

Note: Federal law specifies penalties up to $ 250,000 fine for an individual and $ 500,000 for a company and 5 years imprisonment for the willful discharge of hazardous waste at other than designated facilities. 49 U.S.C. 5124.

(c) If a discharge of hazardous waste or other hazardous material occurs during transportation, and an official of a State or local government or a Federal agency, acting within the scope of his official responsibilities, determines that immediate removal of the waste is necessary to prevent further consequence, that official may authorize the removal of the waste without the preparation of a manifest. [Note: In such cases, EPA does not require carriers to have EPA identification numbers.]

Note 1: EPA requires shippers (generators) and carriers (transporters) of hazardous wastes to have identification numbers which must be displayed on hazardous waste manifests. See 40 CFR parts 262 and 263. (Identification number application forms may be obtained from EPA regional offices.)

Note 2: In 40 CFR part 263, the EPA sets forth requirements for the cleanup of releases of hazardous wastes.

(d) [Redesignated as paragraph (c). See 61 FR 21084, 21102, May 9, 1996.]

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[Amdt. 171-53, 45 FR 34586, May 22, 1980, as amended by Amdt. 171-53, 45 FR 74648, Nov. 10, 1980; Amdt. 171-78, 49 FR 10510, Mar. 20, 1984; Amdt. 171-107, 54 FR 40068, Sept. 29, 1989; Amdt. 171-111, 55 FR 52466, Dec. 21, 1990; 56 FR 66157, Dec. 20, 1991; Amdt. 171-2, 59 FR 49132, Sept. 26, 1994; Amdt. 171-141, 61 FR 21084, 21102, May 9, 1996, as confirmed at Amdt. 171-141, 61 FR 51235, Oct. 1, 1996; 73 FR 57001, 57004, Oct. 1, 2008]

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49 CFR 171.4

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.4 Marine pollutants.

(a) Except as provided in paragraph (c) of this section, no person may offer for transportation or transport a marine pollutant, as defined in § 171.8, in intrastate or interstate commerce except in accordance with the requirements of this subchapter.

(b) The requirements of this subchapter for the transportation of marine pollutants are based on the provisions of Annex III of the 1973 International Convention for Prevention of Pollution from Ships, as modified by the Protocol of 1978 (MARPOL 73/78).

(c) Exceptions.

(1) Except when all or part of the transportation is by vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packagings transported by motor vehicle, rail car or aircraft.

(2) Single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass of 5 kg or less for solids, are not subject to any other requirements of this subchapter provided the packagings meet the general requirements in §§ 173.24 and 173.24a. This exception does not apply to marine pollutants that are a hazardous waste or a hazardous substance. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class, all provisions of this subchapter relevant to any additional hazards continue to apply.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[Amdt. 171-116, 57 FR 52934, Nov. 5, 1993; Amdt. 171-148, 61 FR 51334, 51337, Oct. 1, 1996; 73 FR 4699, 4712, Jan. 28, 2008; 80 FR 1076, 1114, Jan. 8, 2015]

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§ 171.6 Control numbers under the Paperwork Reduction Act.

(a) Purpose and scope. This section collects and displays the control numbers assigned to the HMR collections of information by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995. This section complies with the requirements of 5 CFR 1320.7(f), 1320.12, 1320.13 and 1320.14 (OMB regulations implementing the Paperwork Reduction Act of 1995) for the display of control numbers assigned by OMB to collections of information of the HMR.

(b) OMB control numbers. The table in paragraph (b)(2) of this section sets forth the control numbers assigned to collection of information in the HMR by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995.

(1) Column 1 lists the OMB control number assigned to the HMR collections of information. Column 2 contains the Report Title of the approved collection of information. Column 3 lists the part(s) or section(s) in 49 CFR identified or described in the collection of information.

(2) Table 1 to paragraph (b)(2):

Current OMB control No.	**Title**	**Title 49 CFR part or section where identified and described**
2137-0014	Cargo Tank Specification Requirements	§§ 107.503, 107.504, 178.320, 178.337, 178.338, 178.345, 180.407, 180.409, 180.413, 180.417.
2137-0018	Inspection and Testing of Portable Tanks and Intermediate Bulk Containers	§§ 173.24, 173.32, 178.3, 178.255, 178.273, 178.274, 178.703, 178.801, 180.352, 180.605.
2137-0022	Testing, Inspection, and Marking Require-	§§ 173.5b, 173.302a, 173.303, 173.304,

§ 171.6 Control numbers under the Paperwork Reduction Act.

Current OMB control No.	Title	Title 49 CFR part or section where identified and described
	ments for Cylinders	173.309, 178.2, 178.3, 178.35, 178.44, 178.45, 178.46, 178.57, 178.59, 178.60, 178.61, 178.68, 180.205, 180.207, 180.209, 180.211, 180.213, 180.215, 180.217, Appendix C to Part 180.
2137-0034	Hazardous Materials Shipping Papers and Emergency Response Information	§§ 172.200, 172.201, 172.202, 172.203, 172.204, 172.505, 172.600, 172.602, 172.604, 172.606, 173.6, 173.7, 173.22, 173.56, 174.24, 174.26, 174.114, 175.30, 175.31,175.33, 176.24, 176.27, 176.30, 176.36, 176.89, 177.817.
2137-0039	Hazardous Materials Incidents Reports	§§ 171.15, 171.16, 171.21.
2137-0051	Rulemaking and Special Permit Petitions Requirements	§§ 105.30, 105.40, 106.95, 106.110, 107.105, 107.107, 107.109, 107.113, 107.117, 107.121, 107.123, 107.125, 107.205, 107.211, 107.215, 107.217, 107.219, 107.221, 107.223.
2137-0510	RAM Transportation Requirements	Part 173, Subpart I, §§ 173.22, 173.411, 173.415, 173.416, 173.417, 173.457, 173.471, 173.472, 173.473, 173.476.

§ 171.6 Control numbers under the Paperwork Reduction Act.

Current OMB control No.	Title	Title 49 CFR part or section where identified and described
2137-0542	Flammable Cryogenic Liquids	§§ 173.318, 177.816, 177.840, 180.405.
2137-0557	Approvals for Hazardous Materials	§§ 107.402, 107.403, 107.405, 107.502, 107.503, 107.705, 107.713, 107.715, 107.717, 107.803, 107.805, 107.807, 110.30, 172.101, 172.102, Special Provisions 19, 26, 53, 55, 60, 105, 118, 121, 125, 129, 131, 133, 136, B45, B55, B61, B69, B77, B81, N10, N72, 173.2a, 173.4, 173.7, 173.21, 173.22, 173.24, 173.31, 173.38, 173.51, 173.56, 173.58, 173.59, 173.124, 173.128, 173.159, 173.166, 173.171, 173.214, 173.222, 173.224, 173.225, 173.245, 173.301, 173.305, 173.306, 173.314, 173.315, 173.316, 173.318, 173.334, 173.340, 173.411, 173.433, 173.457, 173.471, 173.472, 173.476, 174.50, 174.63, 175.8, 175.85, 175.701,175.703, 176.168, 176.340, 176.704, 178.3, 178.35, 178.47, 178.53, 178.273, 178.274, 178.503, 178.509, 178.605, 178.606, 178.608, 178.801, 178.813, 180.213.

§ 171.6 Control numbers under the Paperwork Reduction Act.

Current OMB control No.	Title	Title 49 CFR part or section where identified and described
2137-0559	(Rail Carriers and Tank Car Tank Requirements) Requirements for Rail Tank Car Tanks—Transporation of Hazardous Materials by Rail	§§ 172.102, Special provisions: B45, B46, B55, B61, B69, B77, B78, B81; 173.10, 173.31, 174.20, 174.50, 174.63, 174.104, 174.114, 174.204, 179.3, 179.4, 179.5, 179.6, 179.7, 179.11, 179.18, 179.22, 179.100-9, 179.100-12, 179.100-13, 179.100-16, 179.100-17, 179.102-4, 179.102-17, 179.103-1, 179.103-2, 179.103-3, 179.103-5, 179.200-10, 179.200-14, 179.200-15, 179.200-16, 179.200-17, 179.200-19, 179.201-3, 179.201-8, 179.201-9, 179.220-4, 179.220-7, 179.220-8, 179.220-13, 179.220-15, 179.220-17, 179.220-18, 179.220-20, 179.220-22, 179.300-3, 179.300-7, 179.300-9, 179.300-12, 179.300-13, 179.300-15, 179.300-20, 179.400-3, 179.400-4, 179.400-11, 179.400-13, 179.400-16, 179.400-17, 179.400-19, 179.400-20, 179.500-5, 179.500-8, 179.500-12, 179.500-18,

§ 171.6 Control numbers under the Paperwork Reduction Act.

Current OMB control No.	Title	Title 49 CFR part or section where identified and described
		180.505, 180.509, 180.515, 180.517.
2137-0572	Testing requirements for non-bulk packages	§§ 173.168, 178.2, 178.601, Appendix C to Part 178, Appendix D to Part 178.
2137-0582	Container Certification Statement	§§ 176.27, 176.172.
2137-0586	Hazardous Materials Public Sector Training and Planning Grants	Part 110.
2137-0591	Response Plans for Shipments of Oil	Part 130.
2137-0595	Cargo Tank Motor Vehicles in Liquefied Compressed Gas Service	§§ 173.315, 178.337-8, 178.337-9, 180.405, 180.416.
2137-0612	Hazardous Materials Security Plans	Part 172, Subpart I, §§ 172.800, 172.802, 172.804
2137-0613	Subsidiary Hazard Class and Number/ Type of Packagings	§§ 172.202, 172.203
2137-0620	Inspection and Testing of Meter Provers	Part 173, Subpart A, § 173.5a
2137-0621	Requirements for United Nations (UN) Cylinders	§§ 173.301, 173.304, 173.304b, 178.69, 178.70, 178.75, 180.27, 180.209, 180.212, 180.215, 180.217.

§ 171.6 Control numbers under the Paperwork Reduction Act.

Current OMB control No.	Title	Title 49 CFR part or section where identified and described
2137-0628	Flammable Hazardous Materials by Rail Transportation	§§ 130.120, 171.16, 173.41, 173.145, 173.150, 174.310, 174.312.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[56 FR 66157, Dec. 20, 1991, as amended at 57 FR 1877, Jan. 16, 1992; 58 FR 51527, Oct. 1, 1993; 61 FR 33250, 33254, June 26, 1996; 62 FR 51554, 51557, 51558, Oct. 1, 1997; 64 FR 51912, 51915, Sept. 27, 1999, as corrected and amended at 64 FR 61219, 61220, Nov. 10, 1999; 65 FR 58614, 58618, Sept. 29, 2000; 67 FR 51626, 51640, Aug. 8, 2002; 67 FR 61006, 61012, Sept. 27, 2002; 68 FR 31627, 31628, May 28, 2003; 68 FR 44992, 45010, July 31, 2003; 69 FR 54042, 54045, Sept. 7, 2004; 70 FR 33378, 33379, June 8, 2005; 70 FR 56084, 56090, Sept. 23, 2005; 70 FR 73156, 73163, Dec. 9, 2005; 71 FR 54388, 54390, Sept. 14, 2006; 72 FR 55678, 55683, Oct. 1, 2007; 75 FR 53593, 53596, Sept. 1, 2010; 87 FR 79752, 79765, Dec. 27, 2022]

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End of Document

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.7 Reference material.

(a) Certain material is incorporated by reference into subchapters A, B, and C with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, PHMSA must publish a document in the Federal Register and the material must be available to the public. All approved incorporation by reference (IBR) material is available for inspection at PHMSA and at the National Archives and Records Administration (NARA). Contact PHMSA at: The Office of Hazardous Materials Safety, Office of Hazardous Materials Standards, East Building, PHH-10, 1200 New Jersey Avenue SE, Washington, DC 20590-0001. For information on the availability of this material at PHH-10, call 1-800-467-4922, or go to: www.phmsa.dot.gov. For information on the availability of this material at NARA, email: fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html. The material may be obtained from the source(s) in the following paragraph(s) of this section.

(b) Air Transport Association of America, 1301 Pennsylvania Avenue NW., Washington, DC 20004-1707.

(1) ATA Specification No. 300 Packaging of Airline Supplies, Revision 19, July 31, 1996, into §§ 172.102, 173.168, 173.302, and 173.304.

(2) [Reserved]

(c) The Aluminum Association, 1525 Wilson Blvd., Suite 6000, Arlington, VA 22209, telephone 703-358-2960, http://www.aluminum.org.

(1) Aluminum Standards and Data, Seventh Edition, June 1982, into §§ 172.102; 178.65.

(2) Welding Aluminum: Theory and Practice, 2002 Fourth Edition, into § 178.68.

(d) American National Standards Institute, Inc., 25 West 43rd Street, New York, NY 10036.

(1) ANSI/ASHRAE 15-94, Safety Code for Mechanical Refrigeration, 1944, into §§ 173.306; 173.307.

(2) ANSI N14.1 Uranium Hexafluoride — Packaging for Transport, 1971 Edition, into §§ 173.417; 173.420.

(3) ANSI N14.1 Uranium Hexafluoride — Packaging for Transport, 1982 Edition, into §§ 173.417; 173.420.

(4) ANSI N14.1 Uranium Hexafluoride — Packaging for Transport, 1987 Edition, into §§ 173.417; 173.420.

(5) ANSI N14.1 Uranium Hexafluoride — Packaging for Transport, 1990 Edition, into §§ 173.417; 173.420.

(6) ANSI N14.1 Uranium Hexafluoride — Packaging for Transport, 1995 Edition, into §§ 173.417; 173.420.

(7) ANSI N14.1 Uranium Hexafluoride — Packaging for Transport, 2001 Edition, into §§ 173.417; 173.420.

(e) American Petroleum Institute, 1220 L Street NW., Washington, DC 20005-4070.

(1) API Recommended Practice Closures of Underground Petroleum Storage Tanks, 3rd Edition, March 1996, into § 172.102.

(2) [Reserved]

(f) American Pyrotechnics Association (APA), P.O. Box 30438, Bethesda, MD 20824, (301) 907–8181, www.americanpyro.com..

(1) APA 87–1A: Standard for the Construction, Classification, Approval and Transportation of Consumer Fireworks, final draft January 1, 2018 (excluding appendices II through VI), into §§ 107.402(d); 173.59; 173.64; and 173.65.

(2) APA 87–1B: Standard for the Construction, Classification, Approval, and Transportation of Display Fireworks, final draft January 1, 2018 (excluding appendices II through IV), into § 173.64.

(3) APA 87–1C: Standard for the Construction, Classification, Approval, and Transportation of Entertainment Industry and Technical (EI) Pyrotechnics, final draft January 1, 2018 (excluding appendices II through IV), into § 173.64.

(g) The American Society of Mechanical Engineers (ASME), 150 Clove Road, Little Falls, NJ 07424–2139, telephone: 1–800–843–2763, http:// www.asme.org..

(1) ASME Boiler and Pressure Vessel Code (ASME Code), 2017 Edition, July 1, 2017 (as follows), into §§ 172.102; 173.3; 173.5b; 173.24b; 173.306; 173.315; 173.318; 173.420; 178.255–1; 178.255–2; 178.255–14; 178.255–15; 178.273; 178.274; 178.276; 178.277; 178.320; 178.337–1; 178.337–2; 178.337–3; 178.337–4; 178.337–6; 178.337–16; 178.337–18; 178.338–1; 178.338–2; 178.338–3; 178.338–4; 178.338–5; 178.338–6; 178.338–13; 178.338–16; 178.338–18; 178.338–19; 178.345–1; 178.345–2; 178.345–3; 178.345–4; 178.345–7; 178.345–14; 178.345–15; 178.346–1; 178.347–1; 178.348–1; 179.400–3; 180.407:

(i) ASME BPVC.II.A–2017 (vols. 1 and 2), Section II—Materials—Part A— Ferrous Materials Specifications.

(ii) ASME BPVC.II.B–2017, Section II—Materials—Part B—Nonferrous Material Specifications.

(iii) ASME BPVC.V–2017, Section V— Nondestructive Examination.

(iv) ASME BPVC.VIII.1–2017, Section VIII—Rules for Construction of Pressure Vessels Division 1.

(v) ASME BPVC.IX–2017, Section IX—Qualification Standard for Welding, Brazing, and Fusing Procedures; Welders; Brazers; and Welding, Brazing, and Fusing Operators.

(2) ASME B31.4–2012, Pipeline Transportation Systems for Liquids and Slurries, November 12, 2012, into § 173.5a.

(h) ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 1942, telephone (610) 832-9585, http://www.astm.org. Copies of historical standards or standards that ASTM does not have may be purchased from: Engineering Societies Library, 354 East 47th Street, New York, NY 10017.

(1) ASTM A 20/A 20M-93a Standard Specification for General Requirements for Steel Plates for Pressure Vessels, 1993, into §§ 178.337-2; 179.102-4; 179.102-1; 179.102-17.

(2) ASTM A 47-68 Malleable Iron Castings, 1968, into § 179.200-15.

(3) ASTM A 53/A 53M-06a (ASTM A 53) Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless, 2006, into § 173.5b.

(4) ASTM A 106/A 106M-06a (ASTM A 106) Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service, 2006, into § 173.5b.

§ 171.7 Reference material.

(5) ASTM A 240/A 240M-99b Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels, 1999, into §§ 178.57; 178.358-5; 179.100-7; 179.100-10; 179.102-1; 179.102-4; 179.102-17; 179.200-7; 179.201-5; 179.220-7; 179.300-7; 179.400-5.

(6) ASTM A 242-81 Standard Specification for High-Strength Low-Alloy Structural Steel, 1981, into § 178.338-2.

(7) ASTM A 262-93a Standard Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels, 1993, into 179.100-7; 179.200-7; 179.201-4.

(8) ASTM A 285-78 Pressure Vessel Plates, Carbon Steel, Low- and Intermediate-Tensile Strength, 1978, into § 179.300-7.

(9) ASTM A 300-58 Steel Plates for Pressure Vessels for Service at Low Temperatures, 1958, into § 178.337-2.

(10) ASTM A 302/A 302M-93 Standard Specification for Pressure Vessel Plates, Alloy Steel, Manganese-Molybdenum and Manganese-Molybdenum Nickel, 1993, into § 179.100-7; 179.200-7; 179.220-7.

(11) ASTM A 333-67 Seamless and Welded Steel Pipe for Low-Temperature Service, 1967, into § 178.45.

(12) ASTM A 370-94 Standard Test 179.102-1; 179.102-4; Methods and Definitions for Mechanical Testing of Steel Products, 1994, into §§ 179.102-17; 179.102-1; 179.102-4.

(13) ASTM A 441-81 Standard Specification for High-Strength Low-Alloy Structural Manganese Vanadium Steel, 1981, into § 178.338-2.

(14) ASTM A 514-81 Standard Specification for High-Yield Strength Quenched and Tempered Alloy Steel Plate, Suitable for Welding, 1981, into § 178.338-2.

(15) ASTM A 515/A 515M-03 Standard Specification for Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service, 2003, into § 179.300-7.

(16) ASTM A 516/A 516M-90 Standard Specification for Pressure Vessel Plates, Carbon Steel, for Moderate and Lower-Temperature Service, 1990, into § 178.337-2; 179.100-7; 179.102-1; 179.102-2; 179.102-4; 179.102-17; 179.200-7; 179.220-7; 179.300-7.

(17) ASTM A 537/A 537M-91 Standard Specification for Pressure Vessel Plates, Heat-Treated, Carbon-Manganese-Silicon Steel, 1991, into § 179.100-7; 179.102-4; 179.102-17.

(18) ASTM A 572-82 Standard Specification for High-Strength Low-Alloy Columbian-Vanadium Steels of Structural Quality, 1982, into § 178.338-2.

(19) ASTM A 588-81 Standard Specification for High-Strength Low-Alloy Structural Steel with 50 Ksi Minimum Yield Point to 4 in. Thick, 1981, into § 178.338-2.

(20) ASTM A 606-75 Standard Specification for Steel Sheet and Strip Hot-Rolled and Cold-Rolled, High-Strength, Low-Alloy, with Improved Atmospheric Corrosion Resistance, 1975 (Reapproved 1981), into § 178.338-2.

(21) ASTM A 607-98 Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Columbium or Vanadium, or Both, Hot-Rolled and Cold-Rolled, 1998, into § 178.338-2.

(22) ASTM A 612-72a High Strength Steel Plates for Pressure Vessels for Moderate and Lower Temperature Service, 1972, into § 178.337-2.

(23) ASTM A 633-79a Standard Specification for Normalized High-Strength Low-Alloy Structural Steel, 1979 Edition, into § 178.338-2.

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(24) ASTM A 715-81 Standard Specification for Steel Sheet and Strip, Hot-Rolled, High-Strength, Low-Alloy with Improved Formability, 1981, into § 178.338-2.

(25) ASTM A 1008/A 1008M-03 Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High Strength Low-Alloy with Improved Formability, 2003, into § 178.338-2; 178.345-2.

(26) ASTM A 1011/A 1011M-03a Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low Alloy and High Strength Low-Alloy with Improved Formability, 2003, into § 178.338-2; 178.345-2.

(27) ASTM B 162-93a Standard Specification for Nickel Plate, Sheet, and Strip, 1993, into § 173.249; 179.200-7.

(28) ASTM B 209-93 Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate, 1993, into § 179.100-7; 179.200-7; 179.220-7.

(29) ASTM B 221-76 Aluminum Alloy Extruded Bars, Rods, Shapes, and Tubes, 1976, into § 178.46.

(30) ASTM B 557-84 Tension Testing Wrought and Cast Aluminum and Magnesium-Alloy Products, 1984, into § 178.46.

(31) ASTM B 580-79 Standard Specification for Anodic Oxide Coatings on Aluminum, (Re-approved 2000), into § 173.316; 173.318; 178.338-17.

(32) ASTM D 56-05, Standard Test Method for Flash Point by Tag Closed Cup Tester, approved May 1, 2005, into § 173.120.

(33) ASTM D 86-07a, Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure, approved April 1, 2007, into § 173.121.

(34) ASTM D 93-08, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester, approved October 15, 2008, into § 173.120.

(35) ASTM D 1078-05, Standard Test Method for Distillation Range of Volatile Organic Liquids, approved May 15, 2005, into § 173.121.

(36) ASTM D 1238-90b Standard Test Method for Flow Rates of Thermoplastics for Extrusion Plastometer, 1990, into § 173.225.

(37) ASTM D 1709-01 Standard Test Methods for Impact Resistance of Plastic Film by the Free-Falling Dart Method, 2001, into § 173.197.

(38) ASTM D 1835-97 Standard Specification for Liquefied Petroleum (LP) Gases, 1997, into § 180.209.

(39) ASTM D 1838-64 Copper Strip Corrosion by Liquefied Petroleum (LP) Gases, 1964, into § 173.315.

(40) ASTM D 1922-00a Standard Test Method for Propogation Tear Resistance of Plastic Film and Thin Sheeting by Pendulum Method, 2000, into § 173.197.

(41) ASTM D 3278-96 (Reapproved 2004) E1, Standard Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus, approved November 1, 2004, into § 173.120.

(42) ASTM D 3828-07a, Standard Test Methods for Flash Point by Small Scale Closed Cup Tester, approved July 15, 2007, § 173.120.

(43) ASTM D 4206-96 Standard Test Method for Sustained Burning of Liquid Mixtures Using the Small Scale Open-Cup Apparatus, 1996, into § 173.120.

(44) ASTM D 4359-90 Standard Test Method for Determining Whether a Material is a Liquid or a Solid, 1990 into §§ 130.5, 171.8.

(45) ASTM D7900-13e1, Standard Test Method for Determination of Light Hydrocarbons in Stabilized Crude Oils by Gas Chromatography, Approved December 1, 2013, into § 173.121.

(46) ASTM E 8-99 Standard Test Methods for Tension Testing of Metallic Materials, 1999, into § 178.36; 178.37; 178.38; 178.39; 178.44; 178.45; 178.50; 178.51; 178.53; 178.55; 178.56; 178.57; 178.58; 178.59; 178.60; 178.61; 178.68.

(47) ASTM E 23-98 Standard Test Methods for Notched Bar Impact Testing of Metallic Materials, 1998, into § 178.57.

(48) ASTM E 112-88 Standard Test Methods for Determining Average Grain Size, 1988, into § 178.44.

(49) ASTM E 112-96 Standard Test Methods for Determining Average Grain Size, 1996 Edition, into § 178.274; Part 178, appendix A.

(50) ASTM E 114-95 Standard Practice for Ultrasonic Pulse-Echo Straight-Beam Examination by the Contact Method, 1995, into § 178.45.

(51) ASTM E 213-98 Standard Practice for Ultrasonic Examination of Metal Pipe and Tubing, into § 178.45.

(52) ASTM E 290-97a Standard Test Methods for Bend Testing of Material for Ductility, published February 1998, into § 178.37.

(i) [Reserved]

(j) American Welding Society, 550 NW. Le Jeune Road, Miami, Florida 33126.

(1) AWS Code B 3.0; Standard Qualification Procedure; 1972 (FRB 3.0-41, rev. May 1973), into §§ 178.356-2, 178.358-2.

(2) AWS Code D 1.0; Code for Welding in Building Construction (FR D 1.0-66, 1966), into §§ 178.356-2; 178.358-2.

(k) Association of American Railroads, American Railroads Building, 50 F Street NW., Washington, DC 20001; telephone (877) 999-8824, http://www.aar.org/publications.com.

(1) AAR Manual of Standards and Recommended Practices, Section C — Part III, Specifications for Tank Cars, Specification M-1002, (AAR Specifications for Tank Cars), December 2000, §§ 173.31; 179.6; 179.7; 179.15; 179.16; 179.20; 179.22; 179.24; 179.100-9; 179.100-10; 179.100-12; 179.100-13; 179.100-14; 179.100-18; 179.101-1; 179.102-1; 179.102-4; 179.102-17; 179.103-5; 179.200-7; 179.200-9; 179.200-10; 179.200-11; 179.200-13; 179.200-17; 179.200-22; 179.201-6; 179.220-6; 179.220-7; 179.220-10; 179.220-11; 179.220-14; 179.220-18; 179.220-26; 179.300-9; 179.300-10; 179.300-15; 179.300-17; 179.400-5; 179.400-6; 179.400-8; 179.400-11; 179.400-12; 179.400-15; 179.400-18; 179.400-20; 179.400-25; 180.503; 180.509; 180.513; 180.515; 180.517.

(2) AAR Manual of Standards and Recommended Practices, Section C — III, Specifications for Tank Cars, Specification M-1002 (AAR Specifications for Tank Cars), Appendix E, Design Details, implemented April 2010; into §§ 179.202-9, and 179.202-12(f).

(3) AAR Manual of Standards and Recommended Practices, Section I, Specially Equipped Freight Car and Intermodal Equipment, 1988, into § 174.55; 174.63.

(4) AAR Specifications for Design, Fabrication and Construction of Freight Cars, Volume 1, 1988, into § 179.16.

(5) AAR Standard 286; AAR Manual of Standards and Recommended Practices, Section C, Car Construction Fundamentals and Details, Standard S-286, Free/Unrestricted Interchange for 286,000 lb Gross Rail Load Cars (Adopted 2002; Revised: 2003, 2005, 2006), into 179.13.

(l) Chlorine Institute, Inc., 1300 Wilson Boulevard, Arlington, VA 22209.

§ 171.7 Reference material.

(1) Chlorine Institute Emergency Kit “A” for 100-lb. & 150-lb. Chlorine Cylinders, Edition 12, Revision 2, January 2014, into § 173.3.

(2) Chlorine Institute Emergency Kit “B” for Chlorine Ton Containers, Edition 11, July 2014, into § 173.3.

(3) Type 1 JQ 225, Dwg., H51970, Revision F, November 1996, into § 173.315.

(4) Type 1 JQ 225, Dwg. H50155, Revision H, November 1996, into § 173.315.

(5) Pamphlet 57, Emergency Shut-Off Systems for Bulk Transfer of Chlorine, Edition 6, June 2015, into § 177.840.

(6) Section 3, Pamphlet 166, Angle Valve Guidelines for Chlorine Bulk Transportation, 1st Edition, October 2002, into § 178.337-9.

(7) Pamphlet 168, Guidelines for Dual Valve Systems for Bulk Chlorine Transport, Edition 2, July 2015, into § 178.337-9.

(8) Standard Chlorine Angle Valve Assembly, Dwg. 104-8, July 1993, into § 178.337-9.

(9) Excess Flow Valve with Removable Seat, Dwg. 101-7, July 1993, into § 178.337-8.

(10) Excess Flow Valve with Removable Basket, Dwg. 106-6, July 1993, into § 178.337-8.

(11) Standards for Housing and Manway Covers for Steel Cargo Tanks, Dwgs. 137-1 and 137-2, September 1, 1982, into § 178.337-10.

(12) Typical Manway Arrangement Chlorine Cargo Tank, Dwg 137-5, November 1996, into 178.337-10.

(m) Canadian General Standards Board, Place du Portage III, 6B1 11 Laurier Street, Gatineau, Quebec, Canada K1A 1G6.

(1) National Standard of Canada (CAN/CGSB 43.147 — 2005) Construction, Modification, Qualification, Maintenance, and Selection and Use of Means of Containment for the Handling, Offering for Transport, or Transportation of Dangerous Goods by Rail, into § 171.12.

(2) [Reserved]

(n) Compressed Gas Association (CGA), 8484 Westpark Drive, Suite 220, McLean, VA 22102.

(1) CGA C–1—2016, Methods for Pressure Testing Compressed Gas Cylinders, Eleventh edition, copyright 2016, into §§ 178.36, 178.37, 178.38, 178.39, 178.42, 178.44, 178.45, 178.46, 178.47; 178.50; 178.51; 178.53; 178.55; 178.56; 178.57; 178.58; 178.59; 178.60; 178.61; 178.65; 178.68; 180.205, 180.209.

(2) CGA C–3—2005 (Reaffirmed 2011), Standards for Welding on Thin- Walled Steel Cylinders, Seventh edition, copyright 2005, into §§ 178.47; 178.50; 178.51; 178.53; 178.55; 178.56; 178.57; 178.58; 178.59; 178.60; 178.61; 178.65; 178.68; 180.211.

(3) CGA C-5, Cylinder Service Life — Seamless Steel High Pressure Cylinders, 1991 (reaffirmed 1995), into § 173.302a.

(4) CGA C–6—2013, Standards for Visual Inspection of Steel Compressed Gas Cylinders, Eleventh edition, copyright 2013, into §§ 172.102, 173.3, 173.198, 180.205, 180.209, 180.211, 180.411, 180.519.

(5) CGA C–6.1—2013, Standards for Visual Inspection of High Pressure Aluminum Compressed Gas Cylinders, Sixth Edition, copyright 2013 (corrected 4/14/2015), into §§ 180.205; 180.209.

(6) CGA Pamphlet C-6.2, Guidelines for Visual Inspection and Requalification of Fiber Reinforced High Pressure Cylinders, 1996, Third Edition, into § 180.205.

(7) CGA C–6.3—2013, Standard for Visual Inspection of Low Pressure Aluminum Alloy Compressed Gas Cylinders, Third Edition, copyright 2013, into §§ 180.205; 180.209.

(8) CGA C-7-2014, Guide to Classification and Labeling of Compressed Gases, Tenth Edition, copyright 2014, into § 172.400a.

(9) CGA Pamphlet C-8, Standard for Requalification of DOT-3HT Cylinder Design, 1985, into § 180.205; 180.209.

(10) CGA C–11—2013, Practices for Inspection of Compressed Gas Cylinders at Time of Manufacture, Fifth Edition, copyright 2013, into § 178.35.

(11) CGA Pamphlet C-12, Qualification Procedure for Acetylene Cylinder Design, 1994, into § 173.301; 173.303; 178.59; 178.60.

(12) CGA Pamphlet C-13, Guidelines for Periodic Visual Inspection and Requalification of Acetylene Cylinders, 2000, Fourth Edition, into § 173.303; 180.205; 180.209.

(13) CGA C–14—2005 (Reaffirmed 2010), Procedures for Fire Testing of DOT Cylinder Pressure Relief Device Systems, Fourth edition, copyright 2005, into §§ 173.301; 173.323.

(14) CGA G-1.6-2011, Standard for Mobile Acetylene Trailer Systems, Seventh Edition, copyright 2011, into § 173.301.

(15) CGA Pamphlet G-2.2, Guideline Method for Determining Minimum of 0.2% Water in Anhydrous Ammonia, 1985, Second Edition, Reaffirmed 1997, into § 173.315.

(16) CGA Pamphlet G-4.1, Cleaning Equipment for Oxygen Service, 1985, into § 178.338-15.

(17) CGA Pamphlet P-20, Standard for the Classification of Toxic Gas Mixtures, 2003, Third Edition, into § 173.115.

(18) CGA S–1.1—2011, Pressure Relief Device Standards—Part 1—Cylinders for Compressed Gases, Fourteenth edition, copyright 2011, into §§ 173.301; 173.304a; 178.75.

(19) CGA Pamphlet S-1.2, Safety Relief Device Standards Part 2 — Cargo and Portable Tanks for Compressed Gases, 1980, into § 173.315; 173.318; 178.276; 178.277.

(20) CGA S–7—2013, Standard for Selecting Pressure Relief Devices for Compressed Gas Mixtures in Cylinders, Fifth Edition, copyright 2013, into § 173.301.

(21) CGA Technical Bulletin TB-2, Guidelines for Inspection and Repair of MC-330 and MC-331 Cargo Tanks, 1980, into § 180.407; 180.413.

(22) CGA Technical Bulletin TB-25, Design Considerations for Tube Trailers, 2008 Edition, into § 173.301.

(23) CGA V-9-2012, Compressed Gas Association Standard for Compressed Cylinder Valves, Seventh Edition, 2012, into § 173.301.

(o) Department of Defense (DoD), DoD Explosives Safety Board, 4800 Mark Center Drive, Suite 16E12, Alexandria, VA 22350, https://www.ddesb.pentagon.mil/; or Defense Logistics Agency, Technical and Quality Assurance Division, 8725 John J. Kingman Rd., Fort Belvoir, VA 22060, http://www.dla.mil/Pages/default.aspx.

(1) TB 700-2; NAVSEAINST 8020.8C/TO 11A-1-47: DOD Ammunition and Explosives Hazard Classification Procedures, July 30, 2012, into § 173.56.

(2) DLAR 4145.41/AR 700-143/NAVSUPINST 4030.55D/AFMAN 24-210_ IP/MCO 4030.40C: Packaging of Hazardous Material, April 21, 2015, into § 173.7.

(p) European Union. Rue de la Loi/ Wetstraat, 175B–1048 Bruxelles/Brussel Belgique/Belgie¨], https://europa.eu/ european-union/documentspublications_ en.

(1) Directive 2010/35/EU of the European Parliament and of the Council, ‘‘on transportable pressure equipment and repealing Council Directives 76/767/EEC, 84/525/EEC, 84/ 526/EEC, 84/527/EEC and 1999/36/EC’’, June 16, 2010, into § 171.23.

(2) [Reserved].

(q) General Services Administration, Specification Office, Room 6662, 7th and D Street, S.W., Washington, DC 20407.

(1) Federal Specification RR-C-901D, Cylinders, Compressed Gas: Seamless Shatterproof, High Pressure DOT 3AA Steel, and 3AL Aluminum, February 21, 2003, into §§ 173.302; 173.336; 173.337.

(2) [Reserved]

(r) Institute of Makers of Explosives, 1212 New York Ave NW, #650, Washington, DC 20005.

(1) IME Standard 22,IME Safety Library Publication No. 22, Recommendations for the Safe Transportation of Detonators in a Vehicle with Certain Other Explosive Materials, February 2007, into §§ 173.63; 177.835.

(2) IME Standard 23, IME Safety Library Publication No. 23 (IME Standard 23), Recommendations for the Transportation of Explosives, Division 1.5, Ammonium Nitrate Emulsions, Division 5.1, Combustible Liquids, Class 3, and Corrosives, Class 8 in Bulk Packaging, October 2011, into §§ 173.66(intro); 177.835(d).

(3) AESC/IME JPG Standard, Guide to Obtaining DOT Approval of Jet Perforating Guns using AESC/IME Perforating Gun Specifications, Ver. 02, dated September 1, 2017, into § 173.67.

(s) International Atomic Energy Agency (IAEA), P.O. Box 100, Wagramer Strasse 5, A-1400 Vienna, Austria. Also available from: Bernan Associates, 4611-F Assembly Drive, Lanham, MD 20706-4391, USA; or Renouf Publishing Company, Ltd., 812 Proctor Avenue, Ogdensburg, New York 13669, USA.

(1) IAEA Safety Standards for Protecting People and the Environment; Regulations for the Safe Transport of Radioactive Material, Specific Safety Requirements No. SSR-6 (Rev.1), (IAEA Regulations), 2018 Edition, copyright 2018; into §§ 171.22; 171.23; 171.26; 173.415 through 173.417; 173.435; 173.473.

(2) Code of Conduct on the Safety and Security of Radioactive Sources (International Atomic Energy Agency Code of Conduct), copyright 2004, into § 172.800.

(t) International Civil Aviation Organization (“ICAO”), 999 Robert-Bourassa Boulevard, Montreal, Quebec H3C 5H7, Canada, 1-514-954-8219, http://www.icao.int. ICAO Technical Instructions available from: ICAO Document Sales Unit,

sales@icao.int

.

(1) ICAO Doc 9284. Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions), 2021-2022 Edition, copyright 2020; into §§ 171.8; 171.22 through 171.24; 172.101; 172.202; 172.401; 172.407; 172.512; 172.519; 172.602; 173.56; 173.320; 175.10, 175.33; 178.3.

(2) [Reserved]

(u) International Electrotechnical Commission (IEC), 3 rue de Varembe, P.O. Box 131, CH — 1211, GENEVA 20, Switzerland.

(1) IEC 62282-6-100:2010(E), Fuel cell technologies — Part 6-100: Micro fuel cell power systems — Safety, Edition 1.0, March 2010, into §§ 173.230; 175.10.

(2) 62282-6-100 Amend. 1 IEC 2012(E), Amendment 1 to IEC 62282-6-100: Fuel cell technologies — Part 6-100: Micro fuel cell power systems — Safety, Edition 1.0, October 2012, into §§ 173.230; 175.10

(v) International Maritime Organization (“IMO”), 4 Albert Embankment, London, SE1 7SR, United Kingdom, + 44 (0) 20 7735 7611, http://www.imo.org. IMDG Code available from: IMO Publishing,

sales@imo.org

.

(1) International Convention for the Safety of Life at Sea, 1974, Consolidated Edition (SOLAS), Chapter II-2, Construction — Fire protection, fire detection and fire extinction, Regulation 19, Carriage of dangerous goods, Fifth Edition 2009, into §§ 176.63, 176.84.

(2) International Maritime Dangerous Goods Code (IMDG Code), Incorporating Amendment 40-20 (English Edition), (Volumes 1 and 2), 2020 Edition, copyright 2020; into §§ 171.22; 171.23; 171.25; 172.101; 172.202; 172.203; 172.401; 172.407; 172.502; 172.519; 172.602; 173.21; 173.56; 176.2; 176.5; 176.11; 176.27; 176.30; 176.83; 176.84; 176.140; 176.720; 176.906; 178.3; 178.274.

(w) International Organization for Standardization, Case Postale 56, CH-1211, Geneve 20, Switzerland, http://www.iso.org. Also available from: ANSI 25, West 43rd Street, New York, NY 10036, 1-212-642-4900, http://www.ansi.org.

(1) ISO 535-1991(E) Paper and board — Determination of water absorptiveness — Cobb method, 1991, into §§ 178.707; 178.708; 178.516.

(2) ISO 1496-1: 1990 (E) — Series 1 freight containers — Specification and testing, Part 1: General cargo containers. Fifth Edition, (August 15, 1990), into § 173.411.

(3) ISO 1496-3(E) — Series 1 freight containers — Specification and testing — Part 3: Tank containers for liquids, gases and pressurized dry bulk, Fourth edition, March 1995, into §§ 178.74; 178.75; 178.274.

(4) ISO 1516:2002(E), Determination of flash o flash — Closed cup equilibrium method, Third Edition, 2002-03-01, into § 173.120.

(5) ISO 1523:2002(E), Determination of flash point — Closed cup equilibrium method, Third Edition, 2002-03-01, into § 173.120.

(6) ISO 2431-1984(E) Standard Cup Method, 1984, into § 173.121.

(7) ISO 2592:2000(E), Determination of flash and fire points — Cleveland open cup method, Second Edition, 2000-09-15, into § 173.120.

(8) ISO 2719:2002(E), Determination of flash point — Pensky-Martens closed cup method, Third Edition, 2002-11-15, into § 173.120.

(9) ISO 2919:1999(E), Radiation Protection — Sealed radioactive sources — General requirements and classification, (ISO 2919), second edition, February 15, 1999, into § 173.469.

(10) ISO 3036-1975(E) Board — Determination of puncture resistance, 1975, into § 178.708.

(11) ISO 3405:2000(E), Petroleum products — Determination of distillation characteristics at atmospheric pressure, Third Edition, 2000-03-01, into § 173.121.

(12) ISO 3574-1986(E) Cold-reduced carbon steel sheet of commercial and drawing qualities, into § 178.503; part 178, appendix C.

(13) ISO 3679:2004(E), Determination of flash point — Rapid equilibrium closed cup method, Third Edition, 2004-04-01, into § 173.120.

(14) ISO 3680:2004(E), Determination of flash o flash — Rapid equilibrium closed cup method, Fourth Edition, 2004-04-01, into § 173.120.

(15) ISO 3807-2(E), Cylinders for acetylene — Basic requirements — Part 2: Cylinders with fusible plugs, First edition, March 2000, into §§ 173.303; 178.71.

(16) ISO 3807:2013(E), Gas cylinders — Acetylene cylinders — Basic requirements and type testing, Second edition, 2013-09-01, into §§ 173.303; 178.71.

(17) ISO 3924:1999(E), Petroleum products — Determination of boiling range distribution — Gas chromatography method, Second Edition, 1999-08-01, into § 173.121.

§ 171.7 Reference material.

(18) ISO 4126-1:2004(E): Safety devices for protection against excessive pressure — Part 1: Safety valves, Second edition 2004-02-15, into § 178.274.

(19) ISO 4126-7:2004(E): Safety devices for protection against excessive pressure — Part 7: Common data, First Edition 2004-02-15 into § 178.274.

(20) ISO 4126-7:2004/Cor.1:2006(E): Safety devices for protection against excessive pressure — Part 7: Common data, Technical Corrigendum 1, 2006-11-01, into § 178.274.

(21) ISO 4626:1980(E), Volatile organic liquids — Determination of boiling range of organic solvents used as raw materials, First Edition, 1980-03-01, into § 173.121.

(22) ISO 4706:2008(E), Gas cylinders—Refillable welded steel cylinders—Test pressure 60 bar and below, First Edition, 2008-04-15, Corrected Version, 2008-07-01, into § 178.71.

(23) ISO 6406(E), Gas cylinders — Seamless steel gas cylinders — Periodic inspection and testing, Second edition, February 2005, into § 180.207.

(24) ISO 6892 Metallic materials — Tensile testing, July 15, 1984, First Edition, into § 178.274.

(25) ISO 7225(E), Gas cylinders — Precautionary labels, Second Edition, July 2005, into § 178.71.

(26) ISO 7866(E), Gas cylinders — Refillable seamless aluminum alloy gas cylinders — Design, construction and testing, First edition, June 1999, into § 178.71.

(27) ISO 7866:2012(E), Gas cylinders — Refillable seamless aluminium alloy gas cylinders — Design, construction and testing, Second edition, 2012-09-01, into § 178.71.

(28) ISO 7866:2012/Cor.1:2014(E), Gas cylinders — Refillable seamless aluminium alloy gas cylinders — Design, construction and testing, Technical Corrigendum 1, 2014-04-15, into § 178.71.

(29) ISO 8115 Cotton bales — Dimensions and density, 1986 Edition, into § 172.102.

(30) ISO 9809-1:1999(E): Gas cylinders — Refillable seamless steel gas cylinders — Design, construction and testing — Part 1: Quenched and tempered steel cylinders with tensile strength less than 1100 MPa., First edition, June 1999, into §§ 178.37; 178.71; 178.75.

(31) ISO 9809-1:2010(E): Gas cylinders — Refillable seamless steel gas cylinders — Design, construction and testing — Part 1: Quenched and tempered steel cylinders with tensile strength less than 1 100 MPa., Second edition, 2010-04-15, into §§ 178.37; 178.71; 178.75.

(32) ISO 9809-2:2000(E): Gas cylinders — Refillable seamless steel gas cylinders — Design, construction and testing — Part 2: Quenched and tempered steel cylinders with tensile strength greater than or equal to 1 100 MPa., First edition, June 2000, into §§ 178.71; 178.75.

(33) ISO 9809-2:2010(E): Gas cylinders — Refillable seamless steel gas cylinders — Design, construction and testing — Part 2: Quenched and tempered steel cylinders with tensile strength greater than or equal to 1100 MPa., Second edition, 2010-04-15, into §§ 178.71; 178.75.

(34) ISO 9809-3:2000(E): Gas cylinders — Refillable seamless steel gas cylinders — Design, construction and testing — Part 3: Normalized steel cylinders, First edition, December 2000, into §§ 178.71; 178.75.

(35) ISO 9809-3:2010(E): Gas cylinders — Refillable seamless steel gas cylinders — Design, construction and testing — Part 3: Normalized steel cylinders, Second edition, 2010-04-15, into §§ 178.71; 178.75.

(36) ISO 9809-4:2014(E), Gas cylinders — Refillable seamless steel gas cylinders — Design, construction and testing — Part 4: Stainless steel cylinders with an Rm value of less than 1 100 MPa, First edition, 2014-07-15, into §§ 178.71; 178.75.

(37) ISO 9978:1992(E) — Radiation protection — Sealed radioactive sources — Leakage test methods. First Edition, (February 15, 1992), into § 173.469.

(38) ISO 10156:2017(E), Gas cylinders—Gases and gas mixtures—Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets, Fourth edition, 2017-07; into § 173.115.

(39) ISO 10297:1999(E), Gas cylinders—Refillable gas cylinder valves—Specification and type testing, First Edition, 1995-05-01; into §§ 173.301b; 178.71.

(40) ISO 10297:2006(E), Transportable gas cylinders—Cylinder valves—Specification and type testing, Second Edition, 2006-01-15; into §§ 173.301b; 178.71.

(41) ISO 10297:2014(E), Gas cylinders—Cylinder valves—Specification and type testing, Third Edition, 2014-07-15; into §§ 173.301b; 178.71.

(42) ISO 10297:2014/Amd 1:2017(E), Gas cylinders—Cylinder valves—Specification and type testing—Amendment 1: Pressure drums and tubes, Third Edition, 2017-03; into §§ 173.301b; 178.71.

(43) ISO 10461:2005(E), Gas cylinders—Seamless aluminum-alloy gas cylinders—Periodic inspection and testing, Second Edition, 2005-02-15 and Amendment 1, 2006-07-15; into § 180.207.

(44) ISO 10462:2013(E), Gas cylinders—Acetylene cylinders—Periodic inspection and maintenance, Third edition, 2013-12-15; into § 180.207.

(45) ISO 10692-2:2001(E), Gas cylinders—Gas cylinder valve connections for use in the micro-electronics industry—Part 2: Specification and type testing for valve to cylinder connections, First Edition, 2001-08-01; into §§ 173.40; 173.302c.

(46) ISO 11114-1:2012(E), Gas cylinders—Compatibility of cylinder and valve materials with gas contents—Part 1: Metallic materials, Second edition, 2012-03-15; into §§ 172.102; 173.301b; 178.71.

(47) ISO 11114-1:2012/Amd 1:2017(E), Gas cylinders—Compatibility of cylinder and valve materials with gas contents—Part 1: Metallic materials—Amendment 1, Second Edition, 2017-01; into §§ 172.102, 173.301b, 178.71.

(48) ISO 11114-2:2013(E), Gas cylinders—Compatibility of cylinder and valve materials with gas contents—Part 2: Non-metallic materials, Second edition, 2013-04; into §§ 173.301b; 178.71.

(49) ISO 11117:1998(E): Gas cylinders—Valve protection caps and valve guards for industrial and medical gas cylinders—Design, construction and tests, First edition, 1998-08-01; into § 173.301b.

(50) ISO 11117:2008(E): Gas cylinders—Valve protection caps and valve guards—Design, construction and tests, Second edition, 2008-09-01; into § 173.301b.

(51) ISO 11117:2008/Cor.1:2009(E): Gas cylinders—Valve protection caps and valve guards—Design, construction and tests, Technical Corrigendum 1, 2009-05-01; into § 173.301b.

(52) ISO 11118(E), Gas cylinders—Non-refillable metallic gas cylinders—Specification and test methods, First edition, October 1999; into § 178.71.

(53) ISO 11118:2015(E), Gas cylinders—Non-refillable metallic gas cylinders—Specification and test methods, Second edition, 2015-09-15; into §§ 173.301b; 178.71.

(54) ISO 11119-1(E), Gas cylinders—Gas cylinders of composite construction—Specification and test methods—Part 1: Hoop-wrapped composite gas cylinders, First edition, May 2002; into § 178.71.

(55) ISO 11119-1:2012(E), Gas cylinders—Refillable composite gas cylinders and tubes—Design, construction and testing—Part 1: Hoop wrapped fibre reinforced composite gas cylinders and tubes up to 450 l, Second edition, 2012-08-01; into §§ 178.71; 178.75.

(56) ISO 11119-2(E), Gas cylinders—Gas cylinders of composite construction—Specification and test methods—Part 2: Fully wrapped fibre reinforced composite gas cylinders with load-sharing metal liners, First edition, May 2002; into § 178.71.

§ 171.7 Reference material.

(57) ISO 11119-2:2012(E), Gas cylinders—Refillable composite gas cylinders and tubes—Design, construction and testing—Part 2: Fully wrapped fibre reinforced composite gas cylinders and tubes up to 450 l with load-sharing metal liners, Second edition, 2012-07-15; into §§ 178.71; 178.75.

(58) ISO 11119-2:2012/Amd.1:2014(E), Gas cylinders—Refillable composite gas cylinders and tubes—Design, construction and testing—Part 2: Fully wrapped fibre reinforced composite gas cylinders and tubes up to 450 l with load-sharing metal liners, Amendment 1, 2014-08-15; into §§ 178.71; 178.75.

(59) ISO 11119-3(E), Gas cylinders of composite construction—Specification and test methods—Part 3: Fully wrapped fibre reinforced composite gas cylinders with non-load-sharing metallic or non-metallic liners, First edition, September 2002; into § 178.71.

(60) ISO 11119-3:2013(E), Gas cylinders—Refillable composite gas cylinders and tubes—Design, construction and testing—Part 3: Fully wrapped fibre reinforced composite gas cylinders and tubes up to 450 l with non-load-sharing metallic or non-metallic liners, Second edition, 2013-04-15; into §§ 178.71; 178.75.

(61) ISO 11119-4:2016(E), Gas cylinders—Refillable composite gas cylinders—Design, construction and testing—Part 4: Fully wrapped fibre reinforced composite gas cylinders up to 150 L with load-sharing welded metallic liners, First Edition, 2016-02-15; into § 178.71; 178.75.

(62) ISO 11120(E), Gas cylinders—Refillable seamless steel tubes of water capacity between 150 l and 3000 l—Design, construction and testing, First edition, 1999-03; into §§ 178.71; 178.75.

(63) ISO 11120:2015(E), Gas cylinders—Refillable seamless steel tubes of water capacity between 150 l and 3000 l—Design, construction and testing, Second Edition, 2015-02-01; into §§ 178.71; 178.75.

(64) ISO 11513:2011(E), Gas cylinders—Refillable welded steel cylinders containing materials for sub-atmospheric gas packaging (excluding acetylene)—Design, construction, testing, use and periodic inspection, First edition, 2011-09-12; into §§ 173.302c; 178.71; 180.207.

(65) ISO 11621(E), Gas cylinders—Procedures for change of gas service, First edition, April 1997; into §§ 173.302, 173.336, 173.337.

(66) ISO 11623(E), Transportable gas cylinders—Periodic inspection and testing of composite gas cylinders, First edition, March 2002; into § 180.207.

(67) ISO 11623(E):2015, Gas cylinders—Composite construction—Periodic inspection and testing, Second edition, 2015-12-01; into § 180.207.

(68) ISO 13340:2001(E), Transportable gas cylinders—Cylinder valves for non-refillable cylinders—Specification and prototype testing, First edition, 2004-04-01; into §§ 173.301b; 178.71.

(69) ISO 13736:2008(E), Determination of flash point—Abel closed-cup method, Second Edition, 2008-09-15; into § 173.120.

(70) ISO 14246:2014(E), Gas cylinders—Cylinder valves—Manufacturing tests and examination, Second Edition, 2014-06-15; into § 178.71.

(71) ISO 14246:2014/Amd 1:2017(E), Gas cylinders—Cylinder valves—Manufacturing tests and examinations—Amendment 1, Second Edition, 2017-06; into § 178.71.

(72) ISO 16111:2008(E), Transportable gas storage devices—Hydrogen absorbed in reversible metal hydride, First Edition, 2008-11-15; into §§ 173.301b; 173.311; 178.71.

(73) ISO 16148:2016(E), Gas cylinders—Refillable seamless steel gas cylinders and tubes—Acoustic emission examination (AT) and follow-up ultrasonic examination (UT) for periodic inspection and testing, Second Edition, 2016-04-15; into § 180.207.

(74) ISO 17871:2015(E), Gas cylinders—Quick-release cylinder valves—Specification and type testing, First Edition, 2015-08-15; into § 173.301b.

(75) ISO 17879: 2017(E), Gas cylinders—Self-closing cylinder valves—Specification and type testing, First Edition, 2017-07; into §§ 173.301b;178.71.

(76) ISO 18172-1:2007(E), Gas cylinders—Refillable welded stainless steel cylinders—Part 1: Test pressure 6 MPa and below, First Edition, 2007-03-01; into § 178.71.

(77) ISO 20475:2018(E), Gas cylinders—Cylinder bundles—Periodic inspection and testing, First Edition, 2018-02; into § 180.207.

(78) ISO 20703:2006(E), Gas cylinders—Refillable welded aluminum-alloy cylinders—Design, construction and testing, First Edition, 2006-05-01; into § 178.71.

(79) ISO 21172-1:2015(E), Gas cylinders—Welded steel pressure drums up to 3000 litres capacity for the transport of gases—Design and construction—Part 1: Capacities up to 1000 litres, First edition, 2015-04-01; into § 178.71.

(80) ISO 22434:2006(E), Transportable gas cylinders—Inspection and maintenance of cylinder valves, First Edition, 2006-09-01; into § 180.207.

(81) ISO/TR 11364:2012(E), Gas cylinders—Compilation of national and international valve stem/gas cylinder neck threads and their identification and marking system, First Edition, 2012-12-01; into § 178.71.

(x) National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Avenue, Columbus, Ohio 43229.

(1) NB-23, National Board Inspection Code, A Manual for Boiler and Pressure Vessel Inspectors, 1992 Edition, into § 180.413.

(2) [Reserved]

(y) National Fire Protection Association, 1 Batterymarch Park, Quincy, MA, 02169-7471 1-617-770-3000, http://www.nfpa.org.

(1) NFPA 58-Liquefied Petroleum Gas Code, 2001 Edition, into §§ 173.5, 173.315, 173.301(a)(11).

(2) NFPA 498-Standards for Safe Havens and Interchange Lots for Vehicles Transporting Explosives, 2010 Edition, into § 177.835.

(z) National Institute of Standards and Technology, Department of Commerce, 5285 Port Royal Road, Springfield, VA 22151.

(1) USDC, NBS Handbook H-28 (1957), 1957 Handbook of Screw-Thread Standards for Federal Services, December 1966 Edition, into §§ 179.2; 178.45; 178.46.

(2) [Reserved]

(aa) Organization for Economic Cooperation and Development (OECD), OECD Publications and Information Center, 2001 L Street NW, Suite 700, Washington, DC 20036; (+33 1 45 24 82 00, https://www.oecd.org/).

(1) Test No. 404: Acute Dermal Irritation/Corrosion, OECD Guidelines for the Testing of Chemicals, adopted 28 July 2015, into § 173.137.

(2) Test No. 430: In Vitro Skin Corrosion: Transcutaneous Electrical Resistance Test (TER), OECD Guidelines for the Testing of Chemicals, adopted 28 July 2015, into § 173.137.

(3) OECD Guideline for the Testing of Chemicals 431 (Test No. 431): In vitro skin corrosion: reconstructed human epidermis (RHE) test method, adopted 29 July 2016; into § 173.137.

(4) Test No. 435: In Vitro Membrane Barrier Test Method for Skin Corrosion, OECD Guidelines for the Testing of Chemicals, adopted 28 July 2015, into § 173.137.

(bb) Transport Canada, Transport Dangerous Goods. Mailstop: ASD 330 Sparks Street, Ottawa, Ontario, Canada K1A 0N5, 416-973-1868, http://www.tc.gc.ca.

(1) Transportation of Dangerous Goods Regulations (Transport Canada TDG Regulations), into §§ 107.801; 107.805; 171.12; 171.22; 171.23; 172.401; 172.407; 172.502; 172.519; 172.602; 173.31; 173.32; 173.33; 173.301; 180.205; 180.211; 180.212; 180.413.

(i) SOR 2001-286, including Clear Language Amendments, August 2001.

(ii) SOR/2002-306 August 8, 2002.

(iii) SOR/2003-273 July 24, 2003

(iv) SOR/2003-400 December 3, 2003

(v) SOR/2005-216 July 13, 2005

(vi) SOR/2005-279 September 21, 2005

(vii) SOR/2008-34 February 7, 2008

(viii) SOR/2007-179 July 31, 2007

(ix) SOR/2011-239 November 9, 2011.

(x) SOR/2011-60 March 16, 2011.

(xi) SOR/2011-210 October 12, 2011.

(xii) SOR/2012-245 December 5, 2012.

(2) [Reserved]

(xiii) SOR/2014-152 July 2, 2014.

(xiv) SOR/2014-159 July 2, 2014.

(xv) SOR/2014-159 Erratum July 16, 2014.

(xvi) SOR/2014-152 Erratum August 27, 2014.

(xvii) SOR/2014-306 December 31, 2014.

(xviii) SOR/2014-306 Erratum January 28, 2015.

(xix) SOR/2015-100 May 20, 2015.

(xx) SOR/2016-95 June 1, 2016;

(xxi) SOR/2017-137 July 12, 2017.

(xxii) SOR/2017-253 December 13, 2017.

(2) Containers for Transport of Dangerous Goods by Rail, TP 14877E, 12/2013, into § 171.12.

(cc) Truck Trailer Manufacturers Association, 1020 Princess Street, Alexandria, Virginia 22314.

(1) TTMA RP No. 61-98, Performance of manhole and/or Fill Opening Assemblies on MC 306, DOT 406, Non-ASME MC 312 and Non-ASME DOT 412 Cargo Tanks, June 1, 1998, into § 180.405.

(2) TTMA RP No. 81-97, Performance of Spring Loaded Pressure Relief Valves on MC 306, MC 307, MC 312, DOT 406, DOT 407, and DOT 412 Tanks, July 1, 1997 Edition, into §§ 178.345-10; 178.346-3.

(3) TTMA TB No. 107, Procedure for Testing In-Service Unmarked and/or Uncertified MC 306 and Non-ASME MC 312 Type Cargo Tank Manhole Covers, June 1, 1998 Edition, into § 180.405.

(dd) United Nations, Bookshop, GA-1B-103, New York, NY 10017, 1-212-963-7680, https://shop.un.orgor

bookshop@un.org

.

(1) Recommendations on the Transport of Dangerous Goods, Model Regulations (UN Recommendations), 21st revised edition, copyright 2019; into §§ 171.8; 171.12; 172.202; 172.401; 172.407; 172.502; 172.519; 173.22; 173.24; 173.24b; 173.40; 173.56; 173.192; 173.302b; 173.304b; 178.75; 178.274; as follows:

(i) Volume I, ST/SG/AC.10.1/21/Rev.21 (Vol. I).

(ii) Volume II, ST/SG/AC.10.1/21/Rev.21 (Vol. II).

(2) Manual of Tests and Criteria (UN Manual of Tests and Criteria), 7th revised edition, ST/SG/AC.10/11/Rev.7, copyright 2019; into §§ 171.24, 172.102; 173.21; 173.56 through 173.58; 173.60; 173.115; 173.124; 173.125; 173.127; 173.128; 173.137; 173.185; 173.220; 173.221; 173.224; 173.225; 173.232; part 173, appendix H; 175.10; 176.905; 178.274.

(3) Globally Harmonized System of Classification and Labelling of Chemicals (GHS), 8th revised edition, ST/SG/AC.10/30/Rev.8, copyright 2019; into § 172.401.

(4) Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), copyright 2020; into § 171.23; as follows:

(i) Volume I, ECE/TRANS/300 (Vol. I).

(ii) Volume II, ECE/TRANS/300 (Vol. II).

(iii) Corrigendum, ECE/TRANS/300 (Corr. 1).

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[55 FR 52466, Dec. 21, 1990, as amended by 56 FR 57562, Nov. 12, 1991; 56 FR 66158, Dec. 20, 1991; 57 FR 60739, Dec. 22, 1992; 58 FR 50230, Sept. 24, 1993; 58 FR 51528, Oct. 1, 1993; 59 FR 28490, June 2, 1994; 59 FR 38052, July 26, 1994; 59 FR 49132, Sept. 26, 1994; 59 FR 55172, Nov. 3, 1994; 59 FR 64744, Dec. 15, 1994; 59 FR 67405, Dec. 29, 1994; 60 FR 40032, Aug. 4, 1995; 60 FR 48780, 48786, Sept. 20, 1995; 60 FR 49048, 49072, Sept. 21, 1995; 60 FR 50292, 50301, Sept. 28, 1995; 61 FR 25940, 25941, May 23, 1996; 61 FR 25940, 25941, May 23, 1996; 61 FR 26750, 26757, May 28, 1996; 61 FR 27166, 27172, May 30, 1996; 61 FR 28666, 28673, 28674, June 5, 1996; 61 FR 50616, 50622, Sept. 26, 1996; 61 FR 51334, 51337, Oct. 1, 1996; 61 FR 65958, 65959, Dec. 16, 1996; 62 FR 24690, 24699, 24700, May 6, 1997; 62 FR 51554, 51558, Oct. 1, 1997; 63 FR 37454, 37458, 37459, July 10, 1998; 63 FR 52844, 52847, Oct. 1, 1998; 63 FR 57929, 57930, Oct. 29, 1998; 64 FR 10742, 10752, Mar. 5, 1999; 64 FR 28030, 28046, May 24, 1999; 64 FR 45388, 45396, Aug. 19, 1999; 64 FR 51912, 51915, Sept. 27, 1999; 65 FR 50450, 50457, Aug. 18, 2000; 65 FR 58614, 58619, Sept. 29, 2000; 66 FR 8644, 8646, Feb. 1, 2001; 66 FR 33316, 33334, June 21, 2001; 66 FR 45376, 45378, Aug. 28, 2001; 67 FR 51626, 51640, Aug. 8, 2002; 67 FR 53118, 53132, Aug. 14, 2002, as corrected at 67 FR 54967, Aug. 27, 2002; 67 FR 61006, 61012, Sept. 27, 2002; 68 FR 1013, 1015, Jan. 8, 2003; 68 FR 19258, 19273, Apr. 18, 2003; 68 FR 44992, 45010, July 31, 2003; 68 FR 48562, 48566, Aug. 14, 2003; 68 FR 75734, 75735, Dec. 31, 2003; 69 FR 3632, 3664, Jan. 26, 2004; 69 FR 64462, 64471, Nov. 4, 2004; 69 FR 76044, 76061, Dec. 20, 2004; 70 FR 3302, 3307, Jan. 24, 2005; 70 FR 34066, 34071, June 13, 2005; 71 FR 33858, 33874, June 12, 2006; 71 FR 78596, 78611, Dec. 29, 2006; 72 FR 25162, 25170, May 3, 2007; 72 FR 55678, 55683, Oct. 1, 2007; 73 FR 4699, 4712, Jan. 28, 2008; 73 FR 23362, 23366, Apr. 30, 2008; 73 FR 57001, 57004, Oct. 1, 2008; 74 FR 1770, 1796, Jan. 13, 2009; 74 FR 2200, 2232, Jan. 14, 2009; 74 FR 16135, 16140, Apr. 9, 2009; 75 FR 63, 69, Jan. 4, 2010.; 75 FR 53593, 53596, Sept. 1, 2010; 76 FR 3308, Jan. 19, 2011; 76 FR 5483, 5491, Feb. 1, 2011; 76 FR 32867, 32873, June 7, 2011; 76 FR 43510, 43524, July 20, 2011; 76 FR 56304, 56311, Sept. 13, 2011; 77 FR 37962, 37983, June 25, 2012; 77 FR 60935, 60939, Oct. 5, 2012; 78 FR 988, 1027, Jan. 7, 2013.; 78 FR 15303, 15321, Mar. 11, 2013; 78 FR 65454,

65468, Oct. 31, 2013; 79 FR 15033, 15043, Mar. 18, 2014; 79 FR 40590, 40609, July 11, 2014; 80 FR 1076, 1114, Jan. 8, 2015; 80 FR 26644, 26746, May 8, 2015; 80 FR 79424, 79449, Dec. 21, 2015; 81 FR 25613, 25617, Apr. 29, 2016; 81 FR 35484, 35513 June 2, 2016; 82 FR 15796, 15833, Mar. 30, 2017; 83 FR 55792, 55806, Nov. 7, 2018; 84 FR 6910, 6952, Feb. 28, 2019; 85 FR 27810, 27852, May 11, 2020, as corrected at 85 FR 78029, Dec. 3, 2020; 85 FR 75680, 75704, Nov. 25, 2020; 85 FR 85380, 85415, Dec. 28, 2020; 87 FR 44944, 44980, July 26, 2022; 87 FR 79752, 79765, Dec. 27, 2022]

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End of Document

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.8 Definitions and abbreviations.

In this subchapter,

Administrator means the Administrator, Pipeline and Hazardous Materials Safety Administration.

Adsorbed gas. See §173.115 of this subchapter.

Aerosol means an article consisting of any non-refillable receptacle containing a gas compressed, liquefied or dissolved under pressure, the sole purpose of which is to expel a nonpoisonous (other than a Division 6.1 Packing Group III material) liquid, paste, or powder and fitted with a self-closing release device allowing the contents to be ejected by the gas.

Agricultural product means a hazardous material, other than a hazardous waste, whose end use directly supports the production of an agricultural commodity including, but not limited to a fertilizer, pesticide, soil amendment or fuel. An agricultural product is limited to a material in Class 3, 8 or 9, Division 2.1, 2.2, 5.1, or 6.1.

Aircraft battery means a battery designed in accordance with a recognized aircraft battery design standard (e.g. FAA technical standard order) that is capable of meeting all aircraft airworthiness requirements and operating regulations.

Approval means a written authorization, including a competent authority approval, issued by the Associate Administrator, the Associate Administrator's designee, or as otherwise prescribed in the HMR, to perform a function for which prior authorization by the Associate Administrator is required under subchapter C of this chapter (49 CFR parts 171 through 180).

Approved means approval issued or recognized by the Department unless otherwise specifically indicated in this subchapter.

Asphyxiant gas means a gas which dilutes or replaces oxygen normally in the atmosphere.

Associate Administrator means the Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration.

Atmospheric gases means air, nitrogen, oxygen, argon, krypton, neon and xenon.

Authorized Inspection Agency means:

(1) A jurisdiction which has adopted and administers one or more sections of the ASME Boiler and Pressure Vessel Code as a legal requirement and has a representative serving as a member of the ASME Conference Committee; or

(2) an insurance company which has been licensed or registered by the appropriate authority of a State of the United States or a Province of Canada to underwrite boiler and pressure vessel insurance in such State or Province.

Authorized Inspector means an Inspector who is currently commissioned by the National Board of Boiler and Pressure Vessel Inspectors and employed as an Inspector by an Authorized Inspection Agency.

Bag means a flexible packaging made of paper, plastic film, textiles, woven material or other similar materials.

Bar means 1 BAR = 100 kPa (14.5 psi).

Barge means a non-selfpropelled vessel.

Biological product. See §173.134 of this subchapter.

Biological substances, Category B. See §173.134 of this subchapter.

Bottle means an inner packaging having a neck of relatively smaller cross section than the body and an opening capable of holding a closure for retention of the contents.

Bottom shell means that portion of a tank car tank surface, excluding the head ends of the tank car tank, that lies within two feet, measured circumferentially, of the bottom longitudinal center line of the tank car tank.

Box means a packaging with complete rectangular or polygonal faces, made of metal, wood, plywood, reconstituted wood, fiberboard, plastic, or other suitable material. Holes appropriate to the size and use of the packaging, for purposes such as ease of handling or opening, or to meet classification requirements, are permitted as long as they do not compromise the integrity of the packaging during transportation, and are not otherwise prohibited in this subchapter.

Break-bulk means packages of hazardous materials that are handled individually, palletized, or unitized for purposes of transportation as opposed to bulk and containerized freight.

Btu means British thermal unit.

Bulk packaging means a packaging, other than a vessel or a barge, including a transport vehicle or freight container, in which hazardous materials are loaded with no intermediate form of containment. A Large Packaging in which hazardous materials are loaded with an intermediate form of containment, such as one or more articles or inner packagings, is also a bulk packaging. Additionally, a bulk packaging has:

(1) A maximum capacity greater than 450 L (119 gallons) as a receptacle for a liquid;

(2) A maximum net mass greater than 400 kg (882 pounds) and a maximum capacity greater than 450 L (119 gallons) as a receptacle for a solid; or

(3) A water capacity greater than 454 kg (1000 pounds) as a receptacle for a gas as defined in §173.115 of this subchapter.

Bundle of cylinders means assemblies of UN cylinders fastened together and interconnected by a manifold and transported as a unit. The total water capacity for the bundle may not exceed 3,000 L, except that a bundle intended for the transport of gases in Division 2.3 is limited to a water capacity of 1,000 L. Not permitted for air transport.

Bureau of Explosives means the Bureau of Explosives (B of E) of the Association of American Railroads.

C means Celsius or Centigrade.

Captain of the Port (COTP) means the officer of the Coast Guard, under the command of a District Commander, so designated by the Commandant for the purpose of giving immediate direction to Coast

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Guard law enforcement activities within an assigned area. As used in this subchapter, the term Captain of the Port includes an authorized representative of the Captain of the Port.

Carfloat means a vessel that operates on a short run on an irregular basis and serves one or more points in a port area as an extension of a rail line or highway over water, and does not operate in ocean, coastwise, or ferry service.

Cargo aircraft only means an aircraft that is used to transport cargo and is not engaged in carrying passengers. For purposes of this subchapter, the terms cargo aircraft only, cargo-only aircraft and cargo aircraft have the same meaning.

Cargo tank means a bulk packaging that:

(1) Is a tank intended primarily for the carriage of liquids or gases and includes appurtenances, reinforcements, fittings, and closures (for the definition of a tank, see 49 CFR 178.320, 178.337-1, or 178.338-1, as applicable);

(2) Is permanently attached to or forms a part of a motor vehicle, or is not permanently attached to a motor vehicle but which, by reason of its size, construction or attachment to a motor vehicle is loaded or unloaded without being removed from the motor vehicle; and

(3) Is not fabricated under a specification for cylinders, intermediate bulk containers, multi-unit tank car tanks, portable tanks, or tank cars.

Cargo tank motor vehicle means a motor vehicle with one or more cargo tanks permanently attached to or forming an integral part of the motor vehicle.

Cargo vessel means:

(1) Any vessel other than a passenger vessel; and

(2) Any ferry being operated under authority of a change of character certificate issued by a Coast Guard Officer-in-Charge, Marine Inspection.

Carrier means a person who transports passengers or property in commerce by rail car, aircraft, motor vehicle, or vessel.

CC means closed-cup.

Character of vessel means the type of service in which the vessel is engaged at the time of carriage of a hazardous material.

Class means hazard class. See hazard class.

Class 1. See §173.50 of this subchapter.

Class 2. See §173.115 of this subchapter.

Class 3. See §173.120 of this subchapter.

Class 4. See §173.124 of this subchapter.

Class 5. See §173.128 of this subchapter.

Class 6. See §173.132 of this subchapter.

Class 7. See §173.403 of this subchapter.

Class 8. See §173.136 of this subchapter.

Class 9. See §173.140 of this subchapter.

Closure means a device which closes an opening in a receptacle.

COFC means container-on-flat-car.

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Combination packaging means a combination of packaging, for transport purposes, consisting of one or more inner packagings secured in a non-bulk outer packaging. It does not include a composite packaging.

Combustible liquid. See §173.120 of this subchapter.

Commerce means trade or transportation in the jurisdiction of the United States within a single state; between a place in a state and a place outside of the state; that affects trade or transportation between a place in a state and place outside of the state; or on a United States-registered aircraft.

Compatibility group letter means a designated alphabetical letter used to categorize different types of explosive substances and articles for purposes of stowage and segregation. See §173.52 of this subchapter.

Competent Authority means a national agency responsible under its national law for the control or regulation of a particular aspect of the transportation of hazardous materials (dangerous goods). The term Appropriate Authority, as used in the ICAO Technical Instructions (IBR, see §171.7), has the same meaning as Competent Authority. For purposes of this subchapter, the Associate Administrator is the Competent Authority for the United States

Composite packaging means a packaging consisting of an outer packaging and an inner receptacle, so constructed that the inner receptacle and the outer packaging form an integral packaging. Once assembled it remains thereafter an integrated single unit; it is filled, stored, shipped and emptied as such.

Compressed gas. See §173.115 of this subchapter.

Consignee means the person or place shown on a shipping document, package marking, or other media as the location to which a carrier is directed to transport a hazardous material.

Consumer commodity means a material that is packaged and distributed in a form intended or suitable for sale through retail sales agencies or instrumentalities for consumption by individuals for purposes of personal care or household use. This term also includes drugs and medicines.

Container ship means a cargo vessel designed and constructed to transport, within specifically designed cells, portable tanks and freight containers which are lifted on and off with their contents intact.

Corrosive material. See §173.136 of this subchapter.

Crate means an outer packaging with incomplete surfaces.

Crewmember means a person assigned to perform duty in an aircraft during flight time.

Cryogenic liquid. See §173.115(g) of this subchapter.

Cultures and stocks. See §173.134 of this subchapter.

Cylinder means a pressure vessel designed for pressures higher than 40 psia and having a circular cross section. It does not include a portable tank, multi-unit tank car tank, cargo tank, or tank car.

Cylinder means a pressure vessel designed for pressures higher than 40 psia and having a circular cross section. It does not include a portable tank, multi-unit tank car tank, cargo tank, or tank car.

Dangerous when wet material. See §173.124 of this subchapter.

Design Certifying Engineer means a person registered with the Department in accordance with subpart F of part 107 of this chapter who has the knowledge and ability to perform stress analysis of pressure vessels and otherwise determine whether a cargo tank design and construction meets the applicable DOT specification. A Design Certifying Engineer meets the knowledge and ability requirements of this section by meeting any one of the following requirements:

(1) Has an engineering degree and one year of work experience in cargo tank structural or mechanical design;

(2) Is currently registered as a professional engineer by appropriate authority of a state of the United States or a province of Canada; or

(3) Has at least three years' experience in performing the duties of a Design Certifying Engineer prior to September 1, 1991.

Design life, for composite cylinders and tubes, means the maximum life (in number of years) to which the cylinder or tube is designed and approved in accordance with the applicable standard.

Designated facility means a hazardous waste treatment, storage, or disposal facility that has been designated on the manifest by the generator.

Display pack means a package intended to be placed at retail locations which provide direct customer access to consumer commodities contained within the package when all or part of the outer fiberboard packaging is removed.

District Commander means the District Commander of the Coast Guard, or his authorized representative, who has jurisdiction in the particular geographical area.

Division means a subdivision of a hazard class.

DOD means the U.S. Department of Defense.

Domestic transportation means transportation between places within the United States other than through a foreign country.

DOT or Department means U.S. Department of Transportation.

Drum means a flat-ended or convex-ended cylindrical packaging made of metal, fiberboard, plastic, plywood, or other suitable materials. This definition also includes packagings of other shapes made of metal or plastic (e.g., round taper-necked packagings or pail-shaped packagings) but does not include cylinders, jerricans, wooden barrels or bulk packagings.

Electronic data interchange (EDI) means the computer-to-computer exchange of business data in standard formats. In EDI, information is organized according to a specific format (electronic transmission protocol) agreed upon by the sender and receiver of this information, and transmitted through a computer transaction that requires no human intervention or retyping at either end of the transmission.

Elevated temperature material means a material which, when offered for transportation or transported in a bulk packaging:

(1) Is in a liquid phase and at a temperature at or above 100 °C (212 °F);

(2) Is in a liquid phase with a flash point at or above 38 °C (100 °F) that is intentionally heated and offered for transportation or transported at or above its flash point; or

(3) Is in a solid phase and at a temperature at or above 240 °C (464 °F).

Engine means a locomotive propelled by any form of energy and used by a railroad.

EPA means U.S. Environmental Protection Agency.

Etiologic agent. See §173.134 of this subchapter.

EX number means a number preceded by the prefix “EX”, assigned by the Associate Administrator, to an item that has been evaluated under the provisions of §173.56 of this subchapter.

Explosive. See §173.50 of this subchapter.

F means degree Fahrenheit.

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Farmer means a person engaged in the production or raising of crops, poultry, or livestock.

FC number means a number preceded by the prefix “FC”, assigned by a Fireworks Certification Agency to a Division 1.4G Consumer firework device that has been certified under the provisions of §173.65 of this subchapter.

Federal hazardous material transportation law means 49 U.S.C. 5101 et seq.

Ferry vessel means a vessel which is limited in its use to the carriage of deck passengers or vehicles or both, operates on a short run on a frequent schedule between two points over the most direct water route, other than in ocean or coastwise service, and is offered as a public service of a type normally attributed to a bridge or tunnel.

Filling density has the following meanings:

(1) For compressed gases in cylinders, see §173.304a(a)(2) table note 1.

(2) For compressed gases in tank cars, see §173.314(c) table note 1.

(3) For compressed gases in cargo tanks and portable tanks, see §173.315(a) table note 1.

(4) For cryogenic liquids in cylinders, except hydrogen, see §173.316(c)(1).

(5) For hydrogen, cryogenic liquid in cylinders, see §173.316(c)(3) table note 1.

(6) For cryogenic liquids in cargo tanks, see §173.318(f)(1).

(7) For cryogenic liquids in tank cars, see §173.319(d)(1).

Flammable gas. See §173.115 of this subchapter.

Flammable liquid. See §173.120 of this subchapter.

Flammable solid. See §173.124 of this subchapter.

Flexible bulk container means a flexible container with a capacity not exceeding 15 cubic meters and includes liners and attached handling devices and service equipment.

Flash point. See §173.120 of this subchapter.

Freight container means a reusable container having a volume of 64 cubic feet or more, designed and constructed to permit being lifted with its contents intact and intended primarily for containment of packages (in unit form) during transportation.

Fuel cell means an electrochemical device that converts the energy of the chemical reaction between a fuel, such as hydrogen or hydrogen rich gases, alcohols, or hydrocarbons, and an oxidant, such as air or oxygen, to direct current (d.c.) power, heat, and other reaction products.

Fuel cell cartridge or fuel cartridge means an article that stores fuel for discharge into the fuel cell through a valve(s) that controls the discharge of fuel into the fuel cell.

Fuel cell system means a fuel cell with an installed fuel cell cartridge together with wiring, valves, and other attachments that connect the fuel cell or cartridge to the device it powers. The fuel cell or cartridge may be so constructed that it forms an integral part of the device or may be removed and connected manually to the device.

Fuel tank means a tank other than a cargo tank, used to transport flammable or combustible liquid, or compressed gas for the purpose of supplying fuel for propulsion of the transport vehicle to which it is attached, or for the operation of other equipment on the transport vehicle.

Fumigated lading. See §§172.302(g) and 173.9.

Gas means a material which has a vapor pressure greater than 300 kPa (43.5 psia) at 50 °C (122 °F) or is completely gaseous at 20 °C (68 °F) at a standard pressure of 101.3 kPa (14.7 psia).

Gross weight or Gross mass means the weight of a packaging plus the weight of its contents.

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Hazard class means the category of hazard assigned to a hazardous material under the definitional criteria of part 173 of this subchapter and the provisions of the §172.101 table. A material may meet the defining criteria for more than one hazard class but is assigned to only one hazard class.

Hazard zone means one of four levels of hazard (Hazard Zones A through D) assigned to gases, as specified in §173.116(a) of this subchapter, and one of two levels of hazards (Hazard Zones A and B) assigned to liquids that are poisonous by inhalation, as specified in §173.133(a) of this subchapter. A hazard zone is based on the LC50 value for acute inhalation toxicity of gases and vapors, as specified in §173.133(a).

Hazardous material means a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and has designated as hazardous under section 5103 of Federal hazardous materials transportation law (49 U.S.C. 5103). The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (see 49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions in part 173 of this subchapter.

Hazardous substance for the purposes of this subchapter, means a material, including its mixtures and solutions, that—

(1) Is listed in the appendix A to §172.101 of this subchapter;

(2) Is in a quantity, in one package, which equals or exceeds the reportable quantity (RQ) listed in the appendix A to §172.101 of this subchapter; and

(3) When in a mixture or solution—

(i) For radionuclides, conforms to paragraph 7 of the appendix A to §172.101.

(ii) For other than radionuclides, is in a concentration by weight which equals or exceeds the concentration corresponding to the RQ of the material, as shown in the following table:

RQ pounds (kilograms)	Concentration by weight	
	Percent	PPM
5000 (2270)	10	100,000
1000 (454)	2	20,000
100 (45.4)	0.2	2,000
10 (4.54)	0.02	200
1 (0.454)	0.002	20

The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance in appendix A to §172.101 of this subchapter, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

Hazardous waste, for the purposes of this chapter, means any material that is subject to the Hazardous Waste Manifest Requirements of the U.S. Environmental Protection Agency specified in 40 CFR part 262.

Hazmat means a hazardous material.

Hazmat employee means:

(1) A person who is:

(i) Employed on a full-time, part time, or temporary basis by a hazmat employer and who in the course of such full time, part time or temporary employment directly affects hazardous materials transportation safety;

(ii) Self-employed (including an owner-operator of a motor vehicle, vessel, or aircraft) transporting hazardous materials in commerce who in the course of such self-employment directly affects hazardous materials transportation safety;

(iii) A railroad signalman; or

(iv) A railroad maintenance-of-way employee.

(2) This term includes an individual, employed on a full time, part time, or temporary basis by a hazmat employer, or who is self-employed, who during the course of employment:

(i) Loads, unloads, or handles hazardous materials;

(ii) Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs, or tests a package, container or packaging component that is represented, marked, certified, or sold as qualified for use in transporting hazardous material in commerce.

(iii) Prepares hazardous materials for transportation;

(iv) Is responsible for safety of transporting hazardous materials;

(v) Operates a vehicle used to transport hazardous materials.

Hazmat employer means:

(1) A person who employs or uses at least one hazmat employee on a full-time, part time, or temporary basis; and who:

(i) Transports hazardous materials in commerce;

(ii) Causes hazardous materials to be transported in commerce; or

(iii) Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs or tests a package, container, or packaging component that is represented, marked, certified, or sold by that person as qualified for use in transporting hazardous materials in commerce;

(2) A person who is self-employed (including an owner-operator of a motor vehicle, vessel, or aircraft) transporting materials in commerce; and who:

(i) Transports hazardous materials in commerce;

(ii) Causes hazardous materials to be transported in commerce; or

(iii) Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs or tests a package, container, or packaging component that is represented, marked, certified, or sold by that person as qualified for use in transporting hazardous materials in commerce; or

(3) A department, agency, or instrumentality of the United States Government, or an authority of a State, political subdivision of a State, or an Indian tribe; and who:

(i) Transports hazardous materials in commerce;

(ii) Causes hazardous materials to be transported in commerce; or

(iii) Designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs or tests a package, container, or packaging component that is represented, marked, certified, or sold by that person as qualified for use in transporting hazardous materials in commerce.

Hermetically sealed means closed by fusion, gasketing, crimping, or equivalent means so that no gas or vapor can enter or escape.

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High-hazard flammable train (HHFT) means a single train transporting 20 or more loaded tank cars of a Class 3 flammable liquid in a continuous block or a single train carrying 35 or more loaded tank cars of a Class 3 flammable liquid throughout the train consist.

High-hazard flammable unit train (HHFUT) means a single train transporting 70 or more loaded tank cars containing Class 3 flammable liquid.

Household waste means any solid waste (including garbage, trash, and sanitary waste from septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas). This term is not applicable to consolidated shipments of household hazardous materials transported from collection centers. A collection center is a central location where household waste is collected.

HMR means the Hazardous Materials Regulations, parts 171 through 180 of this chapter.

IAEA means International Atomic Energy Agency.

IATA means International Air Transport Association.

ICAO means International Civil Aviation Organization.

IMO means International Maritime Organization.

Incorporated by reference or IBR means a publication or a portion of a publication that is made a part of the regulations of this subchapter. See §171.7.

Infectious substance (etiologic agent). See §173.134 of this subchapter.

Inner packaging means a packaging for which an outer packaging is required for transport. It does not include the inner receptacle of a composite packaging.

Inner receptacle means a receptacle which requires an outer packaging in order to perform its containment function. The inner receptacle may be an inner packaging of a combination packaging or the inner receptacle of a composite packaging.

Intermediate bulk container or IBC means a rigid or flexible portable packaging, other than a cylinder or portable tank, which is designed for mechanical handling. Standards for IBCs manufactured in the United States are set forth in subparts N and O of part 178 of this subchapter.

Intermediate packaging means a packaging which encloses an inner packaging or article and is itself enclosed in an outer packaging.

Intermodal container means a freight container designed and constructed to permit it to be used interchangeably in two or more modes of transport.

Intermodal portable tank or IM portable tank means a specific class of portable tanks designed primarily for international intermodal use.

International transportation means transportation—

(1) Between any place in the United States and any place in a foreign country;

(2) Between places in the United States through a foreign country; or

(3) Between places in one or more foreign countries through the United States.

Irritating material. See §173.132(a)(2) of this subchapter.

Jerrican means a metal or plastic packaging of rectangular or polygonal cross-section.

Large packaging means a packaging that—

(1) Consists of an outer packaging that contains articles or inner packagings;

(2) Is designated for mechanical handling;

(3) Exceeds 400 kg net mass or 450 liters (118.9 gallons) capacity;

(4) Has a volume of not more than 3 cubic meters (m3) (see §178.801(i) of this subchapter); and

(5) Conforms to the requirements for the construction, testing and marking of Large Packagings as specified in subparts P and Q of part 178 of this subchapter.

Large salvage packaging means a special packaging into which damaged, defective, leaking or non-conforming hazardous materials packages, or hazardous materials that have spilled or leaked are placed for the purpose of transport for recovery or disposal, that—

(1) Is designed for mechanical handling; and

(2) Has a net mass greater than 400 kg (882 pounds) or a capacity of greater than 450 L (119 gallons), but has a volume of not more than 3 cubic meters (106 cubic feet).

Limited quantity, when specified as such in a section applicable to a particular material, means the maximum amount of a hazardous material for which there is a specific labeling or packaging exception.

Lighter means a mechanically operated flame-producing device employing an ignition device and containing a Class 3 or a Division 2.1 material. For design, capacity, and filling density requirements for lighters containing a Division 2.1 material, see §173.308.

Lighter refill means a pressurized container that does not contain an ignition device but does contain a release device and is intended for use as a replacement cartridge in a lighter or to refill a lighter with a Division 2.1 flammable gas fuel. For capacity limits, see §173.306(h) of this subchapter.

Liquid means a material, other than an elevated temperature material, with a melting point or initial melting point of 20 °C (68 °F) or lower at a standard pressure of 101.3 kPa (14.7 psia). A viscous material for which a specific melting point cannot be determined must be subjected to the procedures specified in ASTM D 4359 “Standard Test Method for Determining Whether a Material is Liquid or Solid” (IBR, see §171.7).

Liquid phase means a material that meets the definition of liquid when evaluated at the higher of the temperature at which it is offered for transportation or at which it is transported, not at the 38 °C (100 °F) temperature specified in ASTM D 4359 (IBR, see §171.7).

Lithium ion cell or battery means a rechargeable electrochemical cell or battery in which the positive and negative electrodes are both lithium compounds constructed with no metallic lithium in either electrode. A lithium ion polymer cell or battery that uses lithium ion chemistries, as described herein, is regulated as a lithium ion cell or battery.

Lithium metal cell or battery means an electrochemical cell or battery utilizing lithium metal or lithium alloys as the anode. The lithium content of a lithium metal or lithium alloy cell or battery is measured when the cell or battery is in an undischarged state. The lithium content of a lithium metal or lithium alloy battery is the sum of the grams of lithium content contained in the component cells of the battery.

Loading incidental to movement means loading by carrier personnel or in the presence of carrier personnel of packaged or containerized hazardous material onto a transport vehicle, aircraft, or vessel for the purpose of transporting it, including the loading, blocking and bracing a hazardous materials package in a freight container or transport vehicle, and segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo. For a bulk packaging, loading incidental to movement means filling the packaging with a hazardous material for the purpose of transporting it. Loading incidental to movement includes transloading.

Magazine vessel means a vessel used for the receiving, storing, or dispensing of explosives.

Magnetic material. See §173.21(d) of this subchapter.

Marine pollutant, means a material which is listed in appendix B to §172.101 of this subchapter (also see §171.4) and, when in a solution or mixture of one or more marine pollutants, is packaged in a concentration which equals or exceeds:

(1) Ten percent by weight of the solution or mixture for materials listed in the appendix; or

(2) One percent by weight of the solution or mixture for materials that are identified as severe marine pollutants in the appendix.

Marking means a descriptive name, identification number, instructions, cautions, weight, specification, or UN marks, or combinations thereof, required by this subchapter on outer packagings of hazardous materials.

Material of trade means a hazardous material, other than a hazardous waste, that is carried on a motor vehicle—

(1) For the purpose of protecting the health and safety of the motor vehicle operator or passengers;

(2) For the purpose of supporting the operation or maintenance of a motor vehicle (including its auxiliary equipment); or

(3) By a private motor carrier (including vehicles operated by a rail carrier) in direct support of a principal business that is other than transportation by motor vehicle.

Material poisonous by inhalation or Material toxic by inhalation means:

(1) A gas meeting the defining criteria in §173.115(c) of this subchapter and assigned to Hazard Zone A, B, C, or D in accordance with §173.116(a) of this subchapter;

(2) A liquid (other than as a mist) meeting the defining criteria in §173.132(a)(1)(iii) of this subchapter and assigned to Hazard Zone A or B in accordance with §173.133(a) of this subchapter; or

(3) Any material identified as an inhalation hazard by a special provision in column 7 of the §172.101 table.

Maximum allowable working pressure or MAWP: For DOT specification cargo tanks used to transport liquid hazardous materials, see §178.320(a) of this subchapter.

Maximum capacity means the maximum inner volume of receptacles or packagings.

Maximum net mass means the allowable maximum net mass of contents in a single packaging, or as used in subpart M of part 178 of this subchapter, the maximum combined mass of inner packaging, and the contents thereof.

Mechanical displacement meter prover means a mechanical device used in the oilfield service industry consisting of a pipe assembly that is used to calibrate the accuracy and performance of meters that measure the quantities of a product being pumped or transferred at facilities such as drilling locations, refineries, tank farms, and loading racks.

Metered delivery service means a cargo tank unloading operation conducted at a metered flow rate of 378.5 L (100 gallons) per minute or less through an attached delivery hose with a nominal inside diameter of 3.175 cm (1⁄4 inches) or less.

Metal hydride storage system means a single complete hydrogen storage system that includes a receptacle, metal hydride, pressure relief device, shut-off valve, service equipment and internal components used for the transportation of hydrogen only.

Miscellaneous hazardous material. See §173.140 of this subchapter.

Mixture means a material composed of more than one chemical compound or element.

Mode means any of the following transportation methods; rail, highway, air, or water.

§ 171.8 Definitions and abbreviations.

Motor vehicle includes a vehicle, machine, tractor, trailer, or semitrailer, or any combination thereof, propelled or drawn by mechanical power and used upon the highways in the transportation of passengers or property. It does not include a vehicle, locomotive, or car operated exclusively on a rail or rails, or a trolley bus operated by electric power derived from a fixed overhead wire, furnishing local passenger transportation similar to street-railway service.

Movement means the physical transfer of a hazardous material from one geographic location to another by rail car, aircraft, motor vehicle, or vessel.

Multiple-element gas container or MEGC means assemblies of UN cylinders, tubes, or bundles of cylinders interconnected by a manifold and assembled within a framework. The term includes all service equipment and structural equipment necessary for the transport of gases.

Name of contents means the proper shipping name as specified in §172.101 of this subchapter.

Navigable waters means, for the purposes of this subchapter, waters of the United States, including the territorial seas.

Neutron Radiation Detector means a device that detects neutron radiation. In such a device, a gas may be contained in a hermetically sealed electron tube transducer that converts neutron radiation into a measurable electric signal.

Non-bulk packaging means a packaging which has:

(1) A maximum capacity of 450 L (119 gallons) or less as a receptacle for a liquid;

(2) A maximum net mass of 400 kg (882 pounds) or less and a maximum capacity of 450 L (119 gallons) or less as a receptacle for a solid;

(3) A water capacity of 454 kg (1000 pounds) or less as a receptacle for a gas as defined in §173.115 of this subchapter; or

(4) Regardless of the definition of bulk packaging, a maximum net mass of 400 kg (882 pounds) or less for a bag or a box conforming to the applicable requirements for specification packagings, including the maximum net mass limitations, provided in subpart L of part 178 of this subchapter.

Nonflammable gas. See §173.115 of this subchapter.

N.O.S. means not otherwise specified.

N.O.S. description means a shipping description from the §172.101 table which includes the abbreviation n.o.s.

NPT means an American Standard taper pipe thread conforming to the requirements of NBS Handbook H-28 (IBR, see §171.7).

NRC (non-reusable container) means a packaging (container) whose reuse is restricted in accordance with the provisions of §173.28 of this subchapter.

Occupied caboose means a rail car being used to transport non-passenger personnel.

Officer in Charge, Marine Inspection means a person from the civilian or military branch of the Coast Guard designated as such by the Commandant and who under the supervision and direction of the Coast Guard District Commander is in charge of a designated inspection zone for the performance of duties with respect to the enforcement and administration of title 52, Revised Statutes, acts amendatory thereof or supplemental thereto, rules and regulations thereunder, and the inspection required thereby.

Offshore supply vessel means a cargo vessel of less than 500 gross tons that regularly transports goods, supplies or equipment in support of exploration or production of offshore mineral or energy resources.

Open cryogenic receptacle means a transportable thermally insulated receptacle for refrigerated liquefied gases maintained at atmospheric pressure by continuous venting of the refrigerated gas.

Operator means a person who controls the use of an aircraft, vessel, or vehicle.

Organic peroxide. See §173.128 of this subchapter.

ORM means other regulated material. See §173.144 of this subchapter.

Outage or ullage means the amount by which a packaging falls short of being liquid full, usually expressed in percent by volume.

Outer packaging means the outermost enclosure of a composite or combination packaging together with any absorbent materials, cushioning and any other components necessary to contain and protect inner receptacles or inner packagings.

Overpack, except as provided in subpart K of part 178 of this subchapter, means an enclosure that is used by a single consignor to provide protection or convenience in handling of a package or to consolidate two or more packages. Overpack does not include a transport vehicle, freight container, or aircraft unit load device. Examples of overpacks are one or more packages:

(1) Placed or stacked onto a load board such as a pallet and secured by strapping, shrink wrapping, stretch wrapping, or other suitable means; or

(2) Placed in a protective outer packaging such as a box or crate.

Oxidizer. See §173.127 of this subchapter.

Oxidizing gas means a gas that may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does. Specifically, this means a pure gas or gas mixture with an oxidizing power greater than 23.5% as determined by a method specified in ISO 10156: or 10156-2: (IBR, see §171.7 of this subchapter) (see also §173.115(k)).

Oxygen generator (chemical) means a device containing chemicals that upon activation release oxygen as a product of chemical reaction.

Package or Outside Package means a packaging plus its contents. For radioactive materials, see §173.403 of this subchapter.

Packaging means a receptacle and any other components or materials necessary for the receptacle to perform its containment function in conformance with the minimum packing requirements of this subchapter. For radioactive materials packaging, see §173.403 of this subchapter.

Packing group means a grouping according to the degree of danger presented by hazardous materials. Packing Group I indicates great danger; Packing Group II, medium danger; Packing Group III, minor danger. See §172.101(f) of this subchapter.

Passenger (With respect to vessels and for the purposes of part 176 only) means a person being carried on a vessel other than:

(1) The owner or his representative;

(2) The operator;

(3) A bona fide member of the crew engaged in the business of the vessel who has contributed no consideration for his carriage and who is paid for his services; or

(4) A guest who has not contributed any consideration directly or indirectly for his carriage.

Passenger-carrying aircraft means an aircraft that carries any person other than a crewmember, company employee, an authorized representative of the United States, or a person accompanying the shipment.

Passenger vessel means—

(1) A vessel subject to any of the requirements of the International Convention for the Safety of Life at Sea, 1974, which carries more than 12 passengers;

(2) A cargo vessel documented under the laws of the United States and not subject to that Convention, which carries more than 16 passengers;

(3) A cargo vessel of any foreign nation that extends reciprocal privileges and is not subject to that Convention and which carries more than 16 passengers; and

(4) A vessel engaged in a ferry operation and which carries passengers.

Person means an individual, corporation, company, association, firm, partnership, society, joint stock company; or a government, Indian Tribe, or authority of a government or Tribe, that offers a hazardous material for transportation in commerce, transports a hazardous material to support a commercial enterprise, or designs, manufactures, fabricates, inspects, marks, maintains, reconditions, repairs, or tests a package, container, or packaging component that is represented, marked, certified, or sold as qualified for use in transporting hazardous material in commerce. This term does not include the United States Postal Service or, for purposes of 49 U.S.C. 5123 and 5124, a Department, agency, or instrumentality of the government.

Person who offers or offeror means:

(1) Any person who does either or both of the following:

(i) Performs, or is responsible for performing, any pre-transportation function required under this subchapter for transportation of the hazardous material in commerce.

(ii) Tenders or makes the hazardous material available to a carrier for transportation in commerce.

(2) A carrier is not an offeror when it performs a function required by this subchapter as a condition of acceptance of a hazardous material for transportation in commerce (e.g., reviewing shipping papers, examining packages to ensure that they are in conformance with this subchapter, or preparing shipping documentation for its own use) or when it transfers a hazardous material to another carrier for continued transportation in commerce without performing a pre-transportation function.

PHMSA means the Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, Washington, DC 20590.

Placarded car means a rail car which is placarded in accordance with the requirements of part 172 of this subchapter.

Poisonous gas. See §173.115 of this subchapter.

Poisonous materials. See §173.132 of this subchapter.

Portable tank means a bulk packaging (except a cylinder having a water capacity of 1000 pounds or less) designed primarily to be loaded onto, or on, or temporarily attached to a transport vehicle or ship and equipped with skids, mountings, or accessories to facilitate handling of the tank by mechanical means. It does not include a cargo tank, tank car, multi-unit tank car tank, or trailer carrying 3AX, 3AAX, or 3T cylinders.

Preferred route or Preferred highway is a highway for shipment of highway route controlled quantities of radioactive materials so designated by a State routing agency, and any Interstate System highway for which an alternative highway has not been designated by such State agency as provided by §397.103 of this title.

Pre-transportation function means a function specified in the HMR that is required to assure the safe transportation of a hazardous material in commerce, including—

(1) Determining the hazard class of a hazardous material.

(2) Selecting a hazardous materials packaging.

(3) Filling a hazardous materials packaging, including a bulk packaging.

(4) Securing a closure on a filled or partially filled hazardous materials package or container or on a package or container containing a residue of a hazardous material.

(5) Marking a package to indicate that it contains a hazardous material.

(6) Labeling a package to indicate that it contains a hazardous material.

(7) Preparing a shipping paper.

(8) Providing and maintaining emergency response information.

(9) Reviewing a shipping paper to verify compliance with the HMR or international equivalents.

(10) For each person importing a hazardous material into the United States, providing the shipper with timely and complete information as to the HMR requirements that will apply to the transportation of the material within the United States.

(11) Certifying that a hazardous material is in proper condition for transportation in conformance with the requirements of the HMR.

(12) Loading, blocking, and bracing a hazardous materials package in a freight container or transport vehicle.

(13) Segregating a hazardous materials package in a freight container or transport vehicle from incompatible cargo.

(14) Selecting, providing, or affixing placards for a freight container or transport vehicle to indicate that it contains a hazardous material.

Primary hazard means the hazard class of a material as assigned in the §172.101 table.

Private track or Private siding means:

(i) Track located outside of a carrier's right-of-way, yard, or terminals where the carrier does not own the rails, ties, roadbed, or right-of-way, or

(ii) Track leased by a railroad to a lessee, where the lease provides for, and actual practice entails, exclusive use of that trackage by the lessee and/or a general system railroad for purpose of moving only cars shipped to or by the lessee, and where the lessor otherwise exercises no control over or responsibility for the trackage or the cars on the trackage.

Proper shipping name means the name of the hazardous material shown in Roman print (not italics) in §172.101 of this subchapter.

Psi means pounds per square inch.

Psia means pounds per square inch absolute.

Psig means pounds per square inch gauge.

Public vessel means a vessel owned by and being used in the public service of the United States. It does not include a vessel owned by the United States and engaged in a trade or commercial service or a vessel under contract or charter to the United States.

Pyrophoric liquid. See §173.124(b) of this subchapter.

Radiation detection system means an apparatus that contains radiation detectors as components.

Radioactive materials. See §173.403 of this subchapter for definitions relating to radioactive materials.

Rail car means a car designed to carry freight or non-passenger personnel by rail, and includes a box car, flat car, gondola car, hopper car, tank car, and occupied caboose.

Railroad means a person engaged in transportation by rail.

§ 171.8 Definitions and abbreviations.

Receptacle means a containment vessel for receiving and holding materials, including any means of closing.

U.N. Recommendations means the U.N. Recommendations on the Transport of Dangerous Goods, Model Regulations (IBR, see §171.7 of this subchapter).

Reconditioned packaging. See §173.28 of this subchapter.

Registered Inspector means a person registered with the Department in accordance with subpart F of part 107 of this chapter who has the knowledge and ability to determine whether a cargo tank conforms to the applicable DOT specification. A Registered Inspector meets the knowledge and ability requirements of this section by meeting any one of the following requirements:

(1) Has an engineering degree and one year of work experience relating to the testing and inspection of cargo tanks;

(2) Has an associate degree in engineering and two years of work experience relating to the testing and inspection of cargo tanks;

(3) Has a high school diploma (or General Equivalency Diploma) and three years of work experience relating to the testing and inspection of cargo tanks; or

(4) Has at least three years' experience performing the duties of a Registered Inspector prior to September 1, 1991.

Regulated medical waste. See §173.134 of this subchapter.

Remanufactured packagings. See §173.28 of this subchapter.

Reportable quantity (RQ) for the purposes of this subchapter, means the quantity specified in Column 2 of Table 1 or Column 3 of Table 2 of Appendix A to § 172.101 for any material identified in Column 1 of the tables.

Research means investigation or experimentation aimed at the discovery of new theories or laws and the discovery and interpretation of facts or revision of accepted theories or laws in the light of new facts. Research does not include the application of existing technology to industrial endeavors.

Residue means the hazardous material remaining in a packaging, including a tank car, after its contents have been unloaded to the maximum extent practicable and before the packaging is either refilled or cleaned of hazardous material and purged to remove any hazardous vapors.

Reused packaging. See §173.28 of this subchapter.

Reverse logistics means the process of offering for transport or transporting by motor vehicle goods from a retail store for return to its manufacturer, supplier, or distribution facility for the purpose of capturing value (e.g., to receive manufacturer's credit), recall, replacement, recycling, or similar reason. This definition does not include materials that meet the definition of a hazardous waste as defined in this section.

SADT means self-accelerated decomposition temperature and is the lowest temperature at which self-accelerating decomposition may occur in a substance in the packaging, IBC, or portable tank offered for transport. See also § 173.21(f) of this subchapter.

Salvage packaging means a special packaging conforming to §173.3 of this subchapter into which damaged, defective, leaking, or non-conforming hazardous materials packages, or hazardous materials that have spilled or leaked, are placed for purposes of transport for recovery or disposal.

SAPT means self-accelerated polymerization temperature and is the lowest temperature at which self-accelerating polymerization may occur with a substance in the packaging, IBC, or portable tank as offered for transport. See also § 173.21(f) of this subchapter. This definition will be effective until January 2, 2023.

SCF (standard cubic foot) means one cubic foot of gas measured at 60 °F. and 14.7 psia.

Secretary means the Secretary of Transportation.

Self-defense spray means an aerosol or non-pressurized device that:

(1) Is intended to have an irritating or incapacitating effect on a person or animal; and

(2) Meets no hazard criteria other than for Class 9 (for example, a pepper spray; see §173.140(a) of this subchapter) and, for an aerosol, Division 2.1 or 2.2 (see §173.115 of this subchapter), except that it may contain not more than two percent by mass of a tear gas substance (e.g., chloroacetophenone (CN) or 0-chlorobenzylmalonitrile (CS); see §173.132(a)(2) of this subchapter.)

Service life, for composite cylinders and tubes, means the number of years the cylinder or tube is permitted to be in service.

Settled pressure means the pressure exerted by the contents of a UN pressure receptacle in thermal and diffusive equilibrium.

Sharps. See §173.134 of this subchapter.

Shipping paper means a shipping order, bill of lading, manifest or other shipping document serving a similar purpose and prepared in accordance with subpart C of part 172 of this chapter.

Short circuit means a direct connection between positive and negative terminals of a cell or battery that provides an abnormally low resistance path for current flow.

Siftproof packaging means a packaging impermeable to dry contents, including fine solid material produced during transportation.

Single packaging means a non-bulk packaging other than a combination packaging.

Solid means a material which is not a gas or a liquid.

Solution means any homogeneous liquid mixture of two or more chemical compounds or elements that will not undergo any segregation under conditions normal to transportation.

Special permit means a document issued by the Associate Administrator, the Associate Administrator's designee, or as otherwise prescribed in the HMR, under the authority of 49 U.S.C. 5117 permitting a person to perform a function that is not otherwise permitted under subchapter A or C of this chapter, or other regulations issued under 49 U.S.C. 5101 et seq. (e.g., Federal Motor Carrier Safety routing requirements).

Specification packaging means a packaging conforming to one of the specifications or standards for packagings in part 178 or part 179 of this subchapter.

Spontaneously combustible material. See §173.124(b) of this subchapter.

Stabilized means that the hazardous material is in a condition that precludes uncontrolled reaction. This may be achieved by methods such as adding an inhibiting chemical, degassing the hazardous material to remove dissolved oxygen and inerting the air space in the package, or maintaining the hazardous material under temperature control.

State means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, the Virgin Islands, American Samoa, Guam, or any other territory or possession of the United States designated by the Secretary.

State-designated route means a preferred route selected in accordance with U.S. DOT “Guidelines for Selecting Preferred Highway Routes for Highway Route Controlled Quantities of Radioactive Materials” or an equivalent routing analysis which adequately considers overall risk to the public.

Storage incidental to movement means storage of a transport vehicle, freight container, or package containing a hazardous material by any person between the time that a carrier takes physical

possession of the hazardous material for the purpose of transporting it in commerce until the package containing the hazardous material is physically delivered to the destination indicated on a shipping document, package marking, or other medium, or, in the case of a private motor carrier, between the time that a motor vehicle driver takes physical possession of the hazardous material for the purpose of transporting it in commerce until the driver relinquishes possession of the package at its destination and is no longer responsible for performing functions subject to the HMR with respect to that particular package.

(1) Storage incidental to movement includes—

(i) Storage at the destination shown on a shipping document, including storage at a transloading facility, provided the shipping documentation identifies the shipment as a through-shipment and identifies the final destination or destinations of the hazardous material; and

(ii) Rail cars containing hazardous materials that are stored on track that does not meet the definition of “private track or siding” in §171.8, even if those cars have been delivered to the destination shown on the shipping document.

(2) Storage incidental to movement does not include storage of a hazardous material at its final destination as shown on a shipping document.

Stowage means the act of placing hazardous materials on board a vessel.

Strong outer packaging means the outermost enclosure that provides protection against the unintentional release of its contents. It is a packaging that is sturdy, durable, and constructed so that it will retain its contents under normal conditions of transportation. In addition, a strong outer packaging must meet the general packaging requirements of subpart B of part 173 of this subchapter but need not comply with the specification packaging requirements in part 178 of the subchapter. For transport by aircraft, a strong outer packaging is subject to §173.27 of this subchapter. The terms “strong outside container” and “strong outside packaging” are synonymous with “strong outer packaging.”

Subsidiary hazard means a hazard of a material other than the primary hazard. (See primary hazard).

Table in §172.101 or §172.101 table means the Hazardous Materials Table in §172.101 of this subchapter.

Technical name means a recognized chemical name or microbiological name currently used in scientific and technical handbooks, journals, and texts. Generic descriptions are authorized for use as technical names provided they readily identify the general chemical group, or microbiological group. Examples of acceptable generic chemical descriptions are organic phosphate compounds, petroleum aliphatic hydrocarbons and tertiary amines. For proficiency testing only, generic microbiological descriptions such as bacteria, mycobacteria, fungus, and viral samples may be used. Except for names which appear in subpart B of part 172 of this subchapter, trade names may not be used as technical names.

TOFC means trailer-on-flat-car.

Top shell means the tank car tank surface, excluding the head ends and bottom shell of the tank car tank.

Toxin. See §173.134 of this subchapter.

Trailership means a vessel, other than a carfloat, specifically equipped to carry motor transport vehicles and fitted with installed securing devices to tie down each vehicle. The term trailership includes Roll-on/Roll-off (RO/RO) vessels.

Train means one or more engines coupled with one or more rail cars, except during switching operations or where the operation is that of classifying and assembling rail cars within a railroad yard for the purpose of making or breaking up trains.

Train consist means a written record of the contents and location of each rail car in a train.

Trainship means a vessel other than a rail car ferry or carfloat, specifically equipped to transport railroad vehicles, and fitted with installed securing devices to tie down each vehicle.

Transloading means the transfer of a hazardous material by any person from one bulk packaging to another bulk packaging, from a bulk packaging to a non-bulk packaging, or from a non-bulk packaging to a bulk packaging for the purpose of continuing the movement of the hazardous material in commerce.

Transport vehicle means a cargo-carrying vehicle such as an automobile, van, tractor, truck, semitrailer, tank car or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (trailer, rail car, etc.) is a separate transport vehicle.

Transportation or transport means the movement of property and loading, unloading, or storage incidental to that movement.

UFC means Uniform Freight Classification.

UN means United Nations.

UN cylinder means a transportable pressure receptacle with a water capacity not exceeding 150 L that has been marked and certified as conforming to the applicable requirements in part 178 of this subchapter.

UN portable tank means an intermodal tank having a capacity of more than 450 liters (118.9 gallons). It includes a shell fitted with service equipment and structural equipment, including stabilizing members external to the shell and skids, mountings or accessories to facilitate mechanical handling. A UN portable tank must be capable of being filled and discharged without the removal of its structural equipment and must be capable of being lifted when full. Cargo tanks, rail tank car tanks, non-metallic tanks, non-specification tanks, bulk bins, and IBCs and packagings made to cylinder specifications are not UN portable tanks.

UN pressure drum means a welded transportable pressure receptacle of a water capacity exceeding 150 L (39.6 gallons) and not more than 1,000 L (264.2 gallons) (e.g. cylindrical receptacles equipped with rolling hoops, spheres on skids).

UN pressure receptacle means a UN cylinder, drum, or tube.

UN Recommendations means the UN Recommendations on the Transport of Dangerous Goods (IBR, see §171.7).

UN standard packaging means a packaging conforming to standards in the UN Recommendations (IBR, see §171.7).

UN tube means a transportable pressure receptacle of seamless or composite construction having with a water capacity exceeding 150 L (39.6 gallons) but not more than 3,000 L (792.5 gallons) that has been marked and certified as conforming to the requirements in part 178 of this subchapter.

Undeclared hazardous material means a hazardous material that is: (1) Subject to any of the hazard communication requirements in subparts C (Shipping Papers), D (Marking), E (Labeling), and F (Placarding) of part 172 of this subchapter, or an alternative marking requirement in part 173 of this subchapter (such as §§173.4(a)(10) and 173.6(c)); and (2) offered for transportation in commerce without any visible indication to the person accepting the hazardous material for transportation that a hazardous material is present, on either an accompanying shipping document, or the outside of a transport vehicle, freight container, or package.

Unintentional release means the escape of a hazardous material from a package on an occasion not anticipated or planned. This includes releases resulting from collision, package failures, human error, criminal activity, negligence, improper packing, or unusual conditions such as the operation of pressure relief devices as a result of over-pressurization, overfill or fire exposure. It does not include releases, such as venting of packages, where allowed, and the operational discharge of contents from packages.

Unit load device means any type of freight container, aircraft container, aircraft pallet with a net, or aircraft pallet with a net over an igloo.

United States means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, the Virgin Islands, American Samoa, Guam, or any other territory or possession of the United States designated by the Secretary.

Unloading incidental to movement means removing a packaged or containerized hazardous material from a transport vehicle, aircraft, or vessel, or for a bulk packaging, emptying a hazardous material from the bulk packaging after the hazardous material has been delivered to the consignee when performed by carrier personnel or in the presence of carrier personnel or, in the case of a private motor carrier, while the driver of the motor vehicle from which the hazardous material is being unloaded immediately after movement is completed is present during the unloading operation. (Emptying a hazardous material from a bulk packaging while the packaging is on board a vessel is subject to separate regulations as delegated by Department of Homeland Security Delegation No. 0170.1 at 2(103).) Unloading incidental to movement includes transloading.

Vessel includes every description of watercraft, used or capable of being used as a means of transportation on the water.

Viscous liquid means a liquid material which has a measured viscosity in excess of 2500 centistokes at 25 °C. (77 °F.) when determined in accordance with the procedures specified in ASTM Method D 445-72 “Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)” or ASTM Method D 1200-70 “Viscosity of Paints, Varnishes, and Lacquers by Ford Viscosity Cup.”

Volatility refers to the relative rate of evaporation of materials to assume the vapor state.

Waste material means, for the purposes of lab pack requirements in § 173.12 of this subchapter, all hazardous materials which are destined for disposal or recovery, and not so limited to only those defined as a hazardous waste in this section.

Water reactive material. See §173.124(c) of this subchapter.

Water resistant means having a degree of resistance to permeability by and damage caused by water in liquid form.

Watt-hour (Wh) means a unit of energy equivalent to one watt (1 W) of work acting for one hour (1 h) of time. The Watt-hour rating of a lithium ion cell or battery is determined by multiplying the rated capacity of a cell or battery in ampere-hours, by its nominal voltage. Therefore, Watt-hour (Wh) = ampere-hour (Ah) × volts (V).

Wooden barrel means a packaging made of natural wood, of round cross-section, having convex walls, consisting of staves and heads and fitted with hoops.

Working pressure for purposes of UN pressure receptacles, means the settled pressure of a compressed gas at a reference temperature of 15 °C (59 °F).

W.T. means watertight.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[85 FR 75680, 75705, Nov. 25, 2020; 85 FR 83366, 83374, Dec. 21, 2020, as corrected at 86 FR 2564, Jan. 13, 2021; 87 FR 44944, 44982, July 26, 2022; 87 FR 79752, 79765, Dec. 27, 2022]

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49 CFR 171.9

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.9 Rules of construction.

(a) In this subchapter, unless the context requires otherwise:

(1) Words imparting the singular include the plural;

(2) Words imparting the plural include the singular; and

(3) Words imparting the masculine gender include the feminine;

(b) In this subchapter, the word:

(1) "Shall" is used in an imperative sense;

(2) "Must" is used in an imperative sense;

(3) "Should" is used in a recommendatory sense;

(4) "May" is used in a permissive sense to state authority or permission to do the act described, and the words "no person may * * *" or "a person may not * * *" means that no person is required, authorized, or permitted to do the act described; and

(5) "Includes" is used as a word of inclusion not limitation.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[Amdt. 171-32, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 171-32A, 41 FR 40630, Sept. 20, 1976; Amdt. 171-121, 58 FR 51528, Oct. 1, 1993]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.10 Units of measure.

(a) General. To ensure compatibility with international transportation standards, most units of measure in this subchapter are expressed using the International System of Units ("SI" or metric). Where SI units appear, they are the regulatory standard. U.S. standard or customary units, which appear in parentheses following the SI units, are for information only and are not intended to be the regulatory standard.

(b) Abbreviations for SI units of measure generally used throughout this subchapter are as shown in paragraph (c) of this section. Customary units shown throughout this subchapter are generally not abbreviated.

(c) Conversion values.

(1) Conversion values are provided in the following table and are based on values provided in ASTM E 380, "Standard for Metric Practice".

(2) If an exact conversion is needed, the following conversion table should be used.

TABLE OF CONVERSION FACTORS FOR SI UNITS

Measurement	SI to U.S. standard	U.S. standard to SI
Activity	1 TBq=27 Ci	1 Ci=0.037 TBq
Length	1 cm=0.3937008 in	1 in=2.540000 cm
	1 m=3.280840 ft	1 ft=0.3048000 m
Thickness	1 mm=0.03937008 in	1 in=25.40000 mm
Mass (weight)	1 kg=2.204622 lb	1 lb=0.4535924 kg
	1 g=0.03527397 oz	1 oz=28.34952 g
Pressure	1 kPa=0.1450377 psi	1 psi=6.894757 kPa
	1 Bar=100 kPa=14.504 psi	1 psi=0.06895 Bar
	1 kPa=7.5 mm Hg	

§ 171.10 Units of measure.

TABLE OF CONVERSION FACTORS FOR SI UNITS

Measurement	SI to U.S. standard	U.S. standard to SI
Radiation level	1 Sv/hr=100 rem/hr	1 rem/hr=0.01 Sv/hr
Volume (liquid)	1 L=0.2641720 gal	1 gal=3.785412 L
	1 mL=0.03381402 oz	1 oz=29.57353 mL
	1 m<3> =35.31466 ft<3>	1 ft<3> =0.02831685 m<3>
Density	1 kg/m<3> =0.06242797 lb/ft<3>	1 lb/ft<3> =16.01846 kg/m<3>
Force	1 Newton = 0.2248 Pound-force	1 Pound-force =4.483 N

Abbreviation for units of measure are as follows:

Unit of measure and abbreviation:

(SI): millimeter, mm; centimeter, cm; meter, m; gram, g; kilogram, kg; kiloPascal, kPa; liter, L; milliliter, mL; cubic meter, m [sup] 3 ; Terabecquerel, TBq; Gigabecquerel, GBq; millisievert, mSv; Newton, N;

(U.S.): Inch, in; foot, ft; ounce, oz; pound, lb; pounds per square inch, psi; gallon, gal; cubic feet, ft [sup] 3 ; Curie, Ci; millicurie, mCi; millirem, mrem.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[Amdt. 171-111, 56 FR 66159, Dec. 20, 1991; Amdt. 171-136, 60 FR 49106, 49108, Sept. 21, 1995; Amdt. 171-135, 60 FR 50292, 50302, Sept. 28, 1995; 66 FR 33316, 33335, June 21, 2001; 66 FR 45376, 45378, Aug. 28, 2001; 68 FR 75734, 75740, Dec. 31, 2003]

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49 CFR 171.11

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.11 [This section was removed and reserved. See 72 FR 25162, 25171, May 3, 2007.]

[NO TEXT IN ORIGINAL]

Statutory Authority

(49 U.S.C. 5101-5127, 44701; 49 CFR 1.45 and 1.53; Pub. L. 101-410 section 4 (28 U.S.C. 2461 note); Pub. L. 104-134 section 31001.)

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[47 FR 54821, Dec. 6, 1982, as amended by 48 FR 10224, March 10, 1983; 48 FR 31217, July 7, 1983; 48 FR 53712, Nov. 29, 1983; 52 FR 4825, Feb. 17, 1987; 54 FR 27144, June 27, 1989; 55 FR 46798, Nov. 7, 1990; 55 FR 52472, Dec. 21, 1990; 56 FR 66159, Dec. 20, 1991; 57 FR 52935, Nov. 5, 1992; 59 FR 49132, Sept. 26, 1994; 59 FR 67406, Dec. 29, 1994; 60 FR 50292, 50302, Sept. 28, 1995; 61 FR 27166, 27172, May 30, 1996; 62 FR 1217, 1227, Jan. 8, 1997; 62 FR 24690, 24700, May 6, 1997; 62 FR 30767, 30770, June 5, 1997, as corrected at 62 FR 34667, June 27, 1997; 62 FR 39398, July 22, 1997; 63 FR 57929, 57930, Oct. 29, 1998; 64 FR 10742, 10753, Mar. 5, 1999; 64 FR 45388, 45396, Aug. 19, 1999; 65 FR 50450, 50457, Aug. 18, 2000; 65 FR 58614, 58620, Sept. 29, 2000; 66 FR 33316, 33336, June 21, 2001; 66 FR 45177, 45182, Aug. 28, 2001; 67 FR 61006, 61012, Sept. 27, 2002; 68 FR 44992, 45010, July 31, 2003; 68 FR 75734, 75741, Dec. 31, 2003; 69 FR 3632, 3665, Jan. 26, 2004, as corrected at 69 FR 55113, 55115, Sept. 13, 2004, as corrected at 69 FR 58841, 58842, Oct. 1, 2004; 69 FR 75208, 75215, Dec. 15, 2004, as confirmed at 72 FR 44930, 44947, Aug. 9, 2007; 69 FR 76044, 76062, Dec. 20, 2004; 70 FR 56084, 56091, Sept. 23, 2005; 71 FR 3418, 3425, Jan. 23, 2006; 71 FR 33858, 33876, June 12, 2006; 72 FR 4442, 4454, Jan. 31, 2007; 72 FR 25162, 25171, May 3, 2007; 72 FR 55091, Sept. 28, 2007]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.12 North American Shipments.

(a) Requirements for the use of the Transport Canada TDG Regulations.

(1) Applicability. A hazardous material transported from Canada to the United States, from the United States to Canada, or transiting the United States to Canada or a foreign destination may be offered for transportation or transported by motor carrier and rail in accordance with the Transport Canada TDG Regulations (IBR, see § 171.7), an equivalency certificate (permit for equivalent level of safety), or a temporary certificate (permit in support of public interest) issued by Transport Canada as an alternative to the TDG Regulations, as authorized in § 171.22, provided the requirements in §§ 171.22 and 171.23, as applicable, and this section are met. In addition, a cylinder, pressure drum, MEGC, cargo tank motor vehicle, portable tank or rail tank car authorized by the Transport Canada TDG Regulations may be used for transportation to, from, or within the United States provided the cylinder, pressure drum, MEGC, cargo tank motor vehicle, portable tank, or rail tank car conforms to the applicable requirements of this section. Except as otherwise provided in this subpart and subpart C of this part, the requirements in parts 172, 173, and 178 of this subchapter do not apply for a material transported in accordance with the Transport Canada TDG Regulations.

(2) General packaging requirements. When the provisions of this subchapter require a DOT specification or UN standard packaging to be used for transporting a hazardous material, a packaging authorized by the Transport Canada TDG Regulations may be used, subject to the limitations of this part, and only if it is equivalent to the corresponding DOT specification or UN packaging (see § 173.24(d)(2) of this subchapter) authorized by this subchapter.

(3) Bulk packagings. A portable tank, cargo tank motor vehicle or rail tank car equivalent to a corresponding DOT specification and conforming to and authorized by the Transport Canada TDG Regulations may be used provided —

(i) An equivalent type of packaging is authorized for the hazardous material according to the § 172.101 table of this subchapter;

(ii) The portable tank, cargo tank motor vehicle or rail tank car conforms to the requirements of the applicable part 173 bulk packaging section specified in the § 172.101 table for the material to be transported;

(iii) The portable tank, cargo tank motor vehicle or rail tank car conforms to the requirements of all assigned bulk packaging special provisions (B codes, and T and TP codes) in § 172.102 of this subchapter; and

(iv) The bulk packaging conforms to all applicable requirements of §§ 173.31, 173.32, 173.33 and 173.35 of this subchapter, and parts 177 and 180 of this subchapter. The periodic retests and inspections required by §§ 173.31, 173.32 and 173.33 of this subchapter may be performed in

accordance with part 180 of this subchapter or in accordance with the requirements of the TDG Regulations provided that the intervals prescribed in part 180 of this subchapter are met.

(v) Rail tank cars must conform to the requirements of Containers for Transport of Dangerous Goods by Rail (IBR, see § 171.7).

(4) Cylinders, Pressure Drums, and MEGCs. When the provisions of this subchapter require that a DOT specification or a UN pressure receptacle must be used for a hazardous material, a packaging authorized by the Transport Canada TDG Regulations may be used only if it corresponds to the DOT specification or UN standard authorized by this subchapter. Unless otherwise excepted in this subchapter, a cylinder (including a UN pressure receptacle) or MEGC may not be transported unless—

(i) The packaging is a UN pressure receptacle or MEGC marked with the letters “CAN” for Canada as a country of manufacture or a country of approval or is a cylinder that was manufactured, inspected and tested in accordance with a DOT specification or a UN standard prescribed in part 178 of this subchapter, except that cylinders (including UN pressure receptacles) not conforming to these requirements must meet the requirements in § 171.23. Each cylinder (including UN pressure receptacles) must conform to the applicable requirements in part 173 of this subchapter for the hazardous material involved.

(ii) A Canadian Railway Commission (CRC), Board of Transport Commissioners for Canada (BTC), Canadian Transport Commission (CTC) or Transport Canada (TC) specification cylinder manufactured, originally marked, and approved in accordance with the TDG Regulations, and in full conformance with the TDG Regulations is authorized for transportation to, from or within the United States provided:

(A) The CRC, BTC, CTC or TC specification cylinder corresponds with a DOT specification cylinder and the markings are the same as those specified in this subchapter, except that the original markings were “CRC”, “BTC”, “CTC”, or “TC”;

(B) The cylinder has been requalified under a program authorized by the TDG Regulations or subpart I of part 107 of this chapter;

(C) When the regulations authorize a cylinder for a specific hazardous material with a specification marking prefix of “DOT,” a cylinder marked “CRC”, “BTC”, “CTC”, or “TC” otherwise bearing the same markings required of the specified “DOT” cylinder may be used; and

(D) Transport of the cylinder and the material it contains is in all other respects in conformance with the requirements of this subchapter (e.g. valve protection, filling requirements, operational requirements, etc.).

(iii) Authorized CRC, BTC, CTC or TC specification cylinders that correspond with a DOT specification cylinder are as follows:

TC	**DOT (some or all of these specifications may instead be marked with the prefix ICC)**	**CTC (some or all of these specifications may instead be marked with the prefix BTC or CRC)**
TC-3AM	DOT-3A [ICC-3]	CTC-3A
TC-3AAM	DOT-3AA	CTC-3AA
TC-3ANM	DOT-3BN	CTC-3BN

TC	DOT (some or all of these specifications may instead be marked with the prefix ICC)	CTC (some or all of these specifications may instead be marked with the prefix BTC or CRC)
TC-3EM	DOT-3E	CTC-3E
TC-3HTM	DOT-3HT	CTC-3HT
TC-3ALM	DOT-3AL	CTC-3AL
	DOT-3B	CTC-3B
TC-3AXM	DOT-3AX	CTC-3AX
TC-3AAXM	DOT-3AAX	CTC-3AAX
	DOT-3A480X	CTC-3A480X
TC-3TM	DOT-3T	
TC-4AAM33	DOT-4AA480	CTC-4AA480
TC-4BM	DOT-4B	CTC-4B
TC-4BM17ET	DOT-4B240ET	CTC-4B240ET
TC-4BAM	DOT-4BA	CTC-4BA
TC-4BWM	DOT-4BW	CTC-4BW
TC-4DM	DOT-4D	CTC-4D
TC-4DAM	DOT-4DA	CTC-4DA
TC-4DSM	DOT-4DS	CTC-4DS
TC-4EM	DOT-4E	CTC-4E
TC-39M	DOT-39	CTC-39
TC-4LM	DOT-4L	CTC-4L
	DOT-8	CTC-8
	DOT-8AL	CTC-8AL

(5) Class 1 (explosive) materials. When transporting Class 1 (explosive) material, rail and motor carriers must comply with 49 CFR 1572.9 and 1572.11 to the extent the requirements apply.

(6) Lithium cells and batteries. Lithium metal cells and batteries (UN3090) and lithium ion cells and batteries (UN3480) are forbidden for transport as cargo aboard passenger-carrying aircraft. The outside of each package or overpack that contains lithium cells or batteries meeting the conditions for exception in § 173.185(c) of this subchapter and transported in accordance with the Transport Canada TDG Regulations must be marked or labeled in accordance with § 173.185(c)(1)(iii), (iv), and (vi), as appropriate.

(b) Shipments to or from Mexico. Unless otherwise excepted, hazardous materials shipments from Mexico to the United States or from the United States to Mexico must conform to all applicable requirements of this subchapter. When a hazardous material that is a material poisonous by inhalation (see § 171.8) is transported

by highway or rail from Mexico to the United States, or from the United States to Mexico, the following requirements apply:

(1) The shipping description must include the words “Toxic Inhalation Hazard” or “Poison-Inhalation Hazard” or “Inhalation Hazard”, as required in § 172.203(m) of this subchapter.

(2) The material must be packaged in accordance with requirements of this subchapter.

(3) The package must be marked in accordance with § 172.313 of this subchapter.

(4) Except as provided in paragraph (b)(5) of this section, the package must be labeled or placarded POISON GAS or POISON INHALATION HAZARD, as appropriate, in accordance with subparts E and F to part 172 of this subchapter.

(5) A label or placard that conforms to the UN Recommendations (IBR, see § 171.7) specifications for a “Division 2.3" or “Division 6.1" label or placard may be substituted for the POISON GAS or POISON INHALATION HAZARD label or placard required by §§ 172.400(a) and 172.504(e) of this subchapter on a package transported in a closed transport vehicle or freight container. The transport vehicle or freight container must be marked with identification numbers for the material, regardless of the total quantity contained in the transport vehicle or freight container, in the manner specified in § 172.313(c) of this subchapter and placarded as required by subpart F of this subchapter.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[55 FR 52472, Dec. 21, 1990, as amended at 56 FR 66159, Dec. 20, 1991; 57 FR 45453, Oct. 1, 1992; 59 FR 38052, July 26, 1994; 59 FR 49132, Sept. 26, 1994; 59 FR 67406, Dec. 29, 1995; 60 FR 49106, 49108, Sept. 21, 1995; 60 FR 50292, 50302, Sept. 28, 1995; 62 FR 1217, 1227, Jan. 8, 1997; 62 FR 24690, 24700, May 6, 1997; 62 FR 30767, 30770, June 5, 1997, as corrected at 62 FR 34667, June 27, 1997; 62 FR 39398, July 22, 1997; 62 FR 51554, 51558, Oct. 1, 1997; 64 FR 10742, 10753, Mar. 5, 1999; 64 FR 45388, 45396, Aug. 19, 1999; 64 FR 50260, 50262, Sept. 16, 1999, as confirmed and amended at 66 FR 44252, 44254, Aug. 22, 2001; 65 FR 50450, 50457, Aug. 18, 2000; 65 FR 58614, 58620, Sept. 29, 2000; 66 FR 33316, 33336, June 21, 2001; 67 FR 15736, 15739, Apr. 3, 2002; 67 FR 51626, 51641, Aug. 8, 2002; 67 FR 61006, 61012, Sept. 27, 2002; 68 FR 24653, 24659, May 8, 2003, as corrected at 68 FR 32679, 32680, June 2, 2003; 68 FR 44992, 45011, July 31, 2003; 68 FR 75734, 75741, Dec. 31, 2003; 69 FR 3632, 3665, Jan. 26, 2004; 69 FR 75208, 75215, Dec. 15, 2004, as confirmed and amended at 72 FR 44930, 44947, Aug. 9, 2007; 69 FR 76044, 76062, Dec. 20, 2004; 71 FR 3418, 3425, Jan. 23, 2006; 71 FR 33858, 33876, June 12, 2006; 72 FR 25162, 25171, May 3, 2007, as corrected at 72 FR 55090, 55091, Sept. 28, 2007; 74 FR 53182, 53185, Oct. 16, 2009; 79 FR 46012, 46034, Aug. 6, 2014; 80 FR 9217, Feb. 20, 2015; 82 FR 15796, 15836, Mar. 30, 2017; 85 FR 27810, 27853, May 11, 2020; 87 FR 44944, 44982, July 26, 2022; 87 FR 77995, 78010, Dec. 21 , 2022; 87 FR 79752, 79765, Dec. 27, 2022]

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49 CFR 171.12a

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.12a [This section was removed and reserved. See 72 FR 25162, 25172, May 3, 2007.]

[NO TEXT IN ORIGINAL]

Statutory Authority

(49 U.S.C. 5101-5127, 44701; 49 CFR 1.45 and 1.53; Pub. L. 101-410 section 4 (28 U.S.C. 2461 note); Pub. L. 104-134 section 31001.)

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[55 FR 52473, Dec. 21, 1990, as amended at 56 FR 66160, Dec. 20, 1991; 57 FR 45453, Oct. 1, 1992; 57 FR 52935, Nov. 5, 1992; 62 FR 1217, 1227, Jan. 8, 1997; 62 FR 24690, 24700, May 6, 1997; 62 FR 30767, 30770, June 5, 1997, as corrected at 62 FR 34667, June 27, 1997; 62 FR 39398, July 22, 1997; 64 FR 10742, 10753, Mar. 5, 1999; 64 FR 45388, 45396, Aug. 19, 1999; 64 FR 50260, 50262, Sept. 16, 1999, as confirmed at 66 FR 44252, 44254, Aug. 22, 2001; 64 FR 51717, 51720, Sept. 24, 1999, as confirmed and amended at 66 FR 44252, 44254, Aug. 22, 2001; 64 FR 51912, 51915, Sept. 27, 1999; 66 FR 33316, 33336, June 21, 2001; 66 FR 44252, 44255, Aug. 22, 2001; 68 FR 23832, 23842, May 5, 2003, as confirmed at 69 FR 6195, 6198, Feb. 10, 2004; 68 FR 24653, 24659, May 8, 2003, as corrected at 68 FR 32679, 32680, June 2, 2003; 68 FR 44992, 45011, July 31, 2003; 68 FR 75734, 75741, Dec. 31, 2003; 69 FR 75208, 75215, Dec. 15, 2004, as confirmed at 72 FR 44930, 44947, Aug. 9, 2007; 69 FR 76044, 76062, Dec. 20, 2004; 70 FR 34066, 34072, June 13, 2005; 71 FR 3418, 3425, Jan. 23, 2006; 71 FR 33858, 33876, June 12, 2006; 72 FR 25162, 25172, May 3, 2007]

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49 CFR 171.14

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.14 [This section was removed and reserved. See 76 FR 43510, 43525, July 20, 2011.]

[NO TEXT IN ORIGINAL]

Statutory Authority

(49 U.S.C. 5101-5128, 44701; 49 CFR 1.45 and 1.53; Pub. L. 101-410 section 4 (28 U.S.C. 2461 note); Pub. L. 104-134 section 31001.)

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[56 FR 66161, Dec. 20, 1991, as amended by 57 FR 45443, 45454, Oct. 1, 1992; 57 FR 47412, Oct. 16, 1992; 58 FR 12183, Mar. 3, 1993; 58 FR 66303, Dec. 20, 1993; 59 FR 48763, Sept. 22, 1994, as confirmed at 59 FR 53116, Oct. 21, 1994; 59 FR 67406, Dec. 29, 1994; 60 FR 26799, 26800, May 18, 1995; 60 FR 48780, 48786, Sept. 20, 1995; 61 FR 7958, 7959, Feb. 29, 1996; 61 FR 50616, 50622, Sept. 26, 1996; 62 FR 1217, 1227, Jan. 8, 1997; 62 FR 24690, 24700, May 6, 1997; 62 FR 29673, 29676, June 2, 1997, as confirmed at 62 FR 44913, Aug. 25, 1997; 62 FR 39398, 39404, July 22, 1997; 63 FR 52844, 52847, Oct. 1, 1998; 64 FR 10742, 10753, Mar. 5, 1999; 64 FR 50260, 50263, Sept. 16, 1999, as confirmed at 66 FR 44252, 44254, Aug. 22, 2001; 64 FR 51912, 51915, Sept. 27, 1999; 66 FR 33316, 33336, June 21, 2001; 66 FR 45376, 45378, Aug. 28, 2001; 67 FR 15736, 15739, Apr. 3, 2002; 67 FR 53118, 53133, Aug. 14, 2002, as corrected at 67 FR 54967, Aug. 27, 2002; 68 FR 14341, 14346, Mar. 25, 2003; 68 FR 44992, 45011, July 31, 2003; 69 FR 34604, 34607, June 22, 2004; 69 FR 53352, 53354, Sept. 1, 2004, as confirmed at 70 FR 8956, 8957, Feb. 24, 2005; 69 FR 76044, 76062, Dec. 20, 2004; 70 FR 34066, 34072, June 13, 2005; 71 FR 78596, 78611, Dec. 29, 2006; 72 FR 55678, 55684, Oct. 1, 2007; 73 FR 4699, 4713, Jan. 28, 2008; 74 FR 2200, 2233, Jan. 14, 2009]

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§ 171.15 Immediate notice of certain hazardous materials incidents.

(a) General. As soon as practical but no later than 12 hours after the occurrence of any incident described in paragraph (b) of this section, each person in physical possession of the hazardous material must provide notice by telephone to the National Response Center (NRC) on 800-424-8802 (toll free) or 202-267-2675 (toll call). Each notice must include the following information:

(1) Name of reporter;

(2) Name and address of person represented by reporter;

(3) Phone number where reporter can be contacted;

(4) Date, time, and location of incident;

(5) The extent of injury, if any;

(6) Class or division, proper shipping name, and quantity of hazardous materials involved, if such information is available; and

(7) Type of incident and nature of hazardous material involvement and whether a continuing danger to life exists at the scene.

(b) Reportable incident. A telephone report is required whenever any of the following occurs during the course of transportation in commerce (including loading, unloading, and temporary storage):

(1) As a direct result of a hazardous material —

(i) A person is killed;

(ii) A person receives an injury requiring admittance to a hospital;

(iii) The general public is evacuated for one hour or more;

(iv) A major transportation artery or facility is closed or shut down for one hour or more; or

(v) The operational flight pattern or routine of an aircraft is altered;

(2) Fire, breakage, spillage, or suspected radioactive contamination occurs involving a radioactive material (see also § 176.48 of this subchapter);

(3) Fire, breakage, spillage, or suspected contamination occurs involving an infectious substance other than a regulated medical waste;

(4) A release of a marine pollutant occurs in a quantity exceeding 450 L (119 gallons) for a liquid or 400 kg (882 pounds) for a solid;

(5) A situation exists of such a nature (e.g., a continuing danger to life exists at the scene of the incident) that, in the judgment of the person in possession of the hazardous material, it should be reported to the NRC even though it does not meet the criteria of paragraphs (b)(1), (2), (3) or (4) of this section; or

(6) During transportation by aircraft, a fire, violent rupture, explosion or dangerous evolution of heat (i.e., an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a battery or battery-powered device.

(c) Written report. Each person making a report under this section must also make the report required by § 171.16 of this subpart.

Note to § 171.15: Under 40 CFR 302.6, EPA requires persons in charge of facilities (including transport vehicles, vessels, and aircraft) to report any release of a hazardous substance in a quantity equal to or greater than its reportable quantity, as soon as that person has knowledge of the release, to DOT's National Response Center at (toll free) 800-424-8802 or (toll) 202-267-2675.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[35 FR 16837, Oct. 3, 1970; 60 FR 48780, 48786, Sept. 20, 1995; 60 FR 49106, 49108, Sept. 21, 1995; 61 FR 18926, 18931, Apr. 29, 1996; 62 FR 51554, 51558, Oct. 1, 1997; 65 FR 58614, 58620, Sept. 29, 2000; 66 FR 45177, 45182, Aug. 28, 2001; 67 FR 53118, 53133, Aug. 14, 2002, as corrected at 67 FR 54967, Aug. 27, 2002; 68 FR 57629, 57631, Oct. 6, 2003; 68 FR 67746, 67759, Dec. 3, 2003; 69 FR 30114, May 26, 2004; 72 FR 55678, 55684, Oct. 1, 2007; 74 FR 2200, 2233, Jan. 14, 2009; 74 FR 53182, 53186, Oct. 16, 2009; 76 FR 43510, 43525, July 20, 2011; 87 FR 79752, 79766, Dec. 27, 2022]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.16 Detailed hazardous materials incident reports.

(a) General. Each person in physical possession of a hazardous material at the time that any of the following incidents occurs during transportation (including loading, unloading, and temporary storage) must submit a Hazardous Materials Incident Report on DOT Form F 5800.1 (01/2004) within 30 days of discovery of the incident:

(1) Any of the circumstances set forth in § 171.15(b);

(2) An unintentional release of a hazardous material or the discharge of any quantity of hazardous waste;

(3) A specification cargo tank with a capacity of 1,000 gallons or greater containing any hazardous material suffers structural damage to the lading retention system or damage that requires repair to a system intended to protect the lading retention system, even if there is no release of hazardous material;

(4) An undeclared hazardous material is discovered; or

(5) A fire, violent rupture, explosion or dangerous evolution of heat (i.e., an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a battery or battery-powered device.

(b) Providing and retaining copies of the report. Each person reporting under this section must —

(1) Submit a written Hazardous Materials Incident Report to the Information Systems Manager, PHH-60, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, East Building, 1200 New Jersey Ave., SE., Washington, DC 20590-0001, or an electronic Hazardous Material Incident Report to the Information System Manager, PHH-60, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, DC 20590-0001 at http://hazmat.dot.gov;

(2) For an incident involving transportation by aircraft, submit a written or electronic copy of the Hazardous Materials Incident Report to the Federal Aviation Administration (FAA) Regional Office nearest the location of the incident. The nearest FAA Regional Office may be located by calling the FAA Washington Operations Center at 202–267–3333 (any hour) or visiting FAA's website; and

(3) Retain a written or electronic copy of the Hazardous Materials Incident Report for a period of two years at the reporting person's principal place of business. If the written or electronic Hazardous Materials Incident Report is maintained at other than the reporting person's principal place of business, the report must be made available at the reporting person's principal place of business within 24 hours

of a request for the report by an authorized representative or special agent of the Department of Transportation.

(c) Updating the incident report. A Hazardous Materials Incident Report must be updated within one year of the date of occurrence of the incident whenever:

(1) A death results from injury caused by a hazardous material;

(2) There was a misidentification of the hazardous material or package information on a prior incident report;

(3) Damage, loss or related cost that was not known when the initial incident report was filed becomes known; or

(4) Damage, loss, or related cost changes by $ 25,000 or more, or 10% of the prior total estimate, whichever is greater.

(d) Exceptions. Unless a telephone report is required under the provisions of § 171.15 of this part, the requirements of paragraphs (a), (b), and (c) of this section do not apply to the following incidents:

(1) A release of a minimal amount of material from —

(i) A vent, for materials for which venting is authorized;

(ii) The routine operation of a seal, pump, compressor, or valve; or

(iii) Connection or disconnection of loading or unloading lines, provided that the release does not result in property damage.

(2) An unintentional release of hazardous material when:

(i) The material is—

(A) A limited quantity material packaged under authorized exceptions in the § 172.101 Hazardous Materials Table of this subchapter excluding Class 7 (radioactive) material; or

(B) A Packing Group III material in Class or Division 3, 4, 5, 6.1, 8, or 9;

(ii) The material is released from a package having a capacity of less than 20 liters (5.2 gallons) for liquids or less than 30 kg (66 pounds) for solids;

(iii) The total amount of material released is less than 20 liters (5.2 gallons) for liquids or less than 30 kg (66 pounds) for solids; and

(iv) The material is not—

(A) Offered for transportation or transported by aircraft;

(B) A hazardous waste; or

(C) An undeclared hazardous material;

(3) An undeclared hazardous material discovered in an air passenger’s checked or carry-on baggage during the airport screening process. (For discrepancy reporting by carriers, see § 175.31 of this subchapter.)

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

§ 171.16 Detailed hazardous materials incident reports.

[35 FR 16837, Oct. 3, 1970, as amended by 45 FR 73683, Nov. 6, 1980; 47 FR 24584, June 7, 1982; 48 FR 17095, Apr. 21, 1983; 54 FR 25813, June 19, 1989; 55 FR 39978, Oct. 1, 1990; 61 FR 18926, 18932, Apr. 29, 1996; 61 FR 27166, 27172, May 30, 1996; 68 FR 57629, 57632, Oct. 6, 2003; 68 FR 67746, 67759, Dec. 3, 2003, as corrected and amended at 69 FR 30114, 30119, May 26, 2004; 70 FR 56084, 56090, 56091, Sept. 23, 2005; 74 FR 2200, 2233, Jan. 14, 2009; 76 FR 56304, 56311, Sept. 13, 2011; 78 FR 1101, 1112, Jan. 7, 2013; 85 FR 83366, 83375, Dec. 21, 2020, as corrected at 86 FR 2564, Jan. 13, 2021]

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49 CFR 171.17

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.17 [Reserved]

[NO TEXT IN ORIGINAL]

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[NO SOURCE IN ORIGINAL]

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49 CFR 171.18

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.18 [Reserved]

[NO TEXT IN ORIGINAL]

Statutory Authority

(49 U.S.C. 5101-5127; 49 CFR 1.53.)

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[Amdt. 171-50, 44 FR 55577, Sept. 27, 1979; 63 FR 37454, 37459, July 10, 1998]

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49 CFR 171.19

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

LEXISNEXIS' CODE OF FEDERAL REGULATIONS > Title 49 Transportation > Subtitle B — Other Regulations Relating to Transportation > Chapter I — Pipeline and Hazardous Materials Safety Administration, Department of Transportation > Subchapter C — Hazardous Materials Regulations > Part 171 — General Information, Regulations, and Definitions > Subpart B — Incident Reporting, Notification, Boe Approvals and Authorization

§ 171.19 Approvals or authorizations issued by the Bureau of Explosives.

Effective December 31, 1998, approvals or authorizations issued by the Bureau of Explosives (BOE), other than those issued under part 179 of this subchapter, are no longer valid.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[Amdt. 171-70, 48 FR 2655, Jan. 20, 1983, as amended by Amdt. 171-111, 56 FR 66162, Dec. 20, 1991; 63 FR 37454, 37459, July 10, 1998]

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49 CFR 171.20

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.20 Submission of Examination Reports.

(a) When it is required in this subchapter that the issuance of an approval by the Associate Administrator be based on an examination by the Bureau of Explosives (or any other test facility recognized by PHMSA), it is the responsibility of the applicant to submit the results of the examination to the Associate Administrator.

(b) Applications for approval submitted under paragraph (a) of this section, must be submitted to the Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, Washington, DC 20590-0001.

(c) Any applicant for an approval aggrieved by an action taken by the Associate Administrator, under this subpart may file an appeal with the Administrator, PHMSA within 30 days of service of notification of a denial.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[45 FR 32692, May 19, 1980, as amended by 47 FR 43064, Sept. 30, 1982; 55 FR 39978, Oct. 1, 1990; 56 FR 66162, Dec. 20, 1991; 66 FR 45376, 45378, Aug. 28, 2001; 70 FR 56084, 56090, Sept. 23, 2005]

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49 CFR 171.21

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.21 Assistance in investigations and special studies.

(a) A shipper, carrier, package owner, package manufacturer or certifier, repair facility, or person reporting an incident under the provisions of § 171.16 must:

(1) Make all records and information pertaining to the incident available to an authorized representative or special agent of the Department of Transportation upon request; and

(2) Give an authorized representative or special agent of the Department of Transportation reasonable assistance in the investigation of the incident.

(b) If an authorized representative or special agent of the Department of Transportation makes an inquiry of a person required to complete an incident report in connection with a study of incidents, the person shall:

(1) Respond to the inquiry within 30 days after its receipt or within such other time as the inquiry may specify; and

(2) Provide true and complete answers to any questions included in the inquiry.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[54 FR 25813, June 19, 1989; 66 FR 45376, 45378, Aug. 28, 2001; 68 FR 67746, 67760, Dec. 3, 2003; 69 FR 30114, May 26, 2004]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.22 Authorization and conditions for the use of international standards and regulations.

(a) Authorized international standards and regulations. This subpart authorizes, with certain conditions and limitations, the offering for transportation and the transportation in commerce of hazardous materials in accordance with the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions), the International Maritime Dangerous Goods Code (IMDG Code), Transport Canada's Transportation of Dangerous Goods Regulations (Transport Canada TDG Regulations), and the International Atomic Energy Agency Regulations for the Safe Transport of Radioactive Material (IAEA Regulations) (IBR, see § 171.7).

(b) Limitations on the use of international standards and regulations. A hazardous material that is offered for transportation or transported in accordance with the international standards and regulations authorized in paragraph (a) of this section —

(1) Is subject to the requirements of the applicable international standard or regulation and must be offered for transportation or transported in conformance with the applicable standard or regulation; and

(2) Must conform to all applicable requirements of this subpart.

(c) Materials excepted from regulation under international standards and regulations. A material designated as a hazardous material under this subchapter, but excepted from or not subject to the international transport standards and regulations authorized in paragraph (a) of this section (e.g., paragraph 1.16 of the Transport Canada TDG Regulations excepts from regulation quantities of hazardous materials less than or equal to 500 kg gross transported by rail) must be transported in accordance with all applicable requirements of this subchapter.

(d) Materials not regulated under this subchapter. Materials not designated as hazardous materials under this subchapter but regulated by an international transport standard or regulation authorized in paragraph (a) of this section may be offered for transportation and transported in the United States in full compliance (i.e., packaged, marked, labeled, classed, described, stowed, segregated, secured) with the applicable international transport standard or regulation.

(e) Forbidden materials. No person may offer for transportation or transport a hazardous material that is a forbidden material or package as designated in —

(1) Section 173.21 of this subchapter;

(2) Column (3) of the § 172.101 Table of this subchapter;

(3) Column (9A) of the § 172.101 Table of this subchapter when offered for transportation or transported on passenger aircraft or passenger railcar; or

§ 171.22 Authorization and conditions for the use of international standards and regulations.

(4) Column (9B) of the § 172.101 Table of this subchapter when offered for transportation or transported by cargo aircraft.

(f) Complete information and certification.

(1) Except for shipments into the United States from Canada conforming to § 171.12, each person importing a hazardous material into the United States must provide the shipper, and the forwarding agent at the place of entry into the United States, timely and complete written information as to the requirements of this subchapter applicable to the particular shipment.

(2) The shipper, directly or through the forwarding agent at the place of entry, must provide the initial U.S. carrier with the shipper's certification required by § 172.204 of this subchapter, unless the shipment is otherwise excepted from the certification requirement. Except for shipments for which the certification requirement does not apply, a carrier may not accept a hazardous material for transportation unless provided a shipper's certification.

(3) All shipping paper information and package markings required in accordance with this subchapter must be in English. The use of shipping papers and a package marked with both English and a language other than English, in order to dually comply with this subchapter and the regulations of a foreign entity, is permitted under this subchapter.

(4) Each person who provides for transportation or receives for transportation (see §§ 174.24, 175.30, 176.24 and 177.817 of this subchapter) a shipping paper must retain a copy of the shipping paper or an electronic image thereof that is accessible at or through its principal place of business in accordance with § 172.201(e) of this subchapter.

(g) Additional requirements for the use of international standards and regulations. All shipments offered for transportation or transported in the United States in accordance with this subpart must conform to the following requirements of this subchapter, as applicable:

(1) The emergency response information requirements in subpart G of part 172 of this subchapter;

(2) The training requirements in subpart H of part 172 of this subchapter, including function-specific training in the use of the international transport standards and regulations authorized in paragraph (a) of this section, as applicable;

(3) The security requirements in subpart I of part 172 of this subchapter;

(4) The incident reporting requirements in §§ 171.15 and 171.16 of this part for incidents occurring within the jurisdiction of the United States including on board vessels in the navigable waters of the United States and aboard aircraft of United States registry anywhere in air commerce;

(5) For export shipments, the general packaging requirements in §§ 173.24 and 173.24a of this subchapter;

(6) For export shipments, the requirements for the reuse, reconditioning, and remanufacture of packagings in § 173.28 of this subchapter; and

(7) The registration requirements in subpart G of part 107 of this chapter.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

§ 171.22 Authorization and conditions for the use of international standards and regulations.

[72 FR 25162, 25172, May 3, 2007, as corrected at 72 FR 55090, 55091, Sept. 28, 2007; 72 FR 55678, 55684, Oct. 1, 2007; 74 FR 53182, 53186, Oct. 16, 2009; 76 FR 56304, 56311, Sept. 13, 2011; 80 FR 72914, 72920, Nov. 23, 2015; 81 FR 35484, 35513, June 2, 2016]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.23 Requirements for specific materials and packagings transported under the ICAO Technical Instructions, IMDG Code, Transport Canada TDG Regulations, or the IAEA Regulations.

All shipments offered for transportation or transported in the United States under the ICAO Technical Instructions, IMDG Code, Transport Canada TDG Regulations, or the IAEA Regulations (IBR, see § 171.7) must conform to the requirements of this section, as applicable.

(a) Conditions and requirements for cylinders and pressure receptacles—

(1) Applicability. Except as provided in this paragraph (a), a filled cylinder (pressure receptacle) manufactured to other than a DOT specification or a UN standard in accordance with part 178 of this subchapter, a DOT exemption or special permit cylinder, a TC, CTC, CRC, or BTC cylinder authorized under § 171.12, or a cylinder used as a fire extinguisher in conformance with § 173.309(a) of this subchapter, may not be transported to, from, or within the United States.

(2) Conditions. Cylinders (including UN pressure receptacles) transported to, from, or within the United States must conform to the applicable requirements of this subchapter. Unless otherwise excepted in this subchapter, a cylinder must not be transported unless—

(i) The cylinder is manufactured, inspected and tested in accordance with a DOT specification or a UN standard prescribed in part 178 of this subchapter, or a TC, CTC, CRC, or BTC specification set out in the Transport Canada TDG Regulations (IBR, see § 171.7), except that cylinders not conforming to these requirements must meet the requirements in paragraph (a)(3), (4), or (5) of this section;

(ii) The cylinder is equipped with a pressure relief device in accordance with § 173.301(f) of this subchapter and conforms to the applicable requirements in part 173 of this subchapter for the hazardous material involved;

(iii) The openings on an aluminum cylinder in oxygen service conform to the requirements of this paragraph, except when the cylinder is used for aircraft parts or used aboard an aircraft in accordance with the applicable airworthiness requirements and operating regulations. An aluminum DOT specification cylinder must have an opening configured with straight (parallel) threads. A UN pressure receptacle may have straight (parallel) or tapered threads provided the UN pressure receptacle is marked with the thread type, e.g. ''17E, 25E, 18P, or 25P'' and fitted with the properly marked valve; and

(iv) A UN pressure receptacle is marked with ''USA'' as a country of approval in conformance with §§ 178.69 and 178.70 of this subchapter, or ''CAN'' for Canada.

(3) Pi-marked pressure receptacles. Pressure receptacles that are marked with a pi mark in accordance with the European Directive 2010/35/EU (IBR, see § 171.7) on transportable pressure equipment (TPED) and that comply with the requirements of Packing Instruction P200 or P208 and 6.2 of the ADR (IBR, see § 171.7) concerning pressure relief device use, test period, filling ratios, test pressure, maximum working pressure, and material compatibility for the lading contained or gas being filled, are authorized as follows:

(i) Filled pressure receptacles imported for intermediate storage, transport to point of use, discharge, and export without further filling; and

(ii) Pressure receptacles imported or domestically sourced for the purpose of filling, intermediate storage, and export.

(iii) The bill of lading or other shipping paper must identify the cylinder and include the following certification: “This cylinder (These cylinders) conform(s) to the requirements for pi-marked cylinders found in 171.23(a)(3).”

(4) Importation of cylinders for discharge within a single port area. Except as provided in § 171.23(a)(3), a cylinder manufactured to other than a DOT specification or UN standard in accordance with part 178 of this subchapter, or a TC, CTC, BTC, or CRC specification cylinder set out in the Transport Canada TDG Regulations (IBR, see § 171.7), and certified as being in conformance with the transportation regulations of another country may be authorized, upon written request to and approval by the Associate Administrator, for transportation within a single port area, provided—

(i) The cylinder is transported in a closed freight container;

(ii) The cylinder is certified by the importer to provide a level of safety at least equivalent to that required by the regulations in this subchapter for a comparable DOT, TC, CTC, BTC, or CRC specification or UN cylinder; and

(iii) The cylinder is not refilled for export unless in compliance with paragraph (a)(5) of this section.

(5) Filling of cylinders for export or for use on board a vessel. A cylinder not manufactured, inspected, tested and marked in accordance with part 178 of this subchapter, or a cylinder manufactured to other than a UN standard, DOT specification, exemption or special permit, or other than a TC, CTC, BTC, or CRC specification, may be filled with a gas in the United States and offered for transportation and transported for export or alternatively, for use on board a vessel, if the following conditions are met:

(i) The cylinder has been requalified and marked in accordance with subpart C of part 180 of this subchapter, or has been requalified as authorized by the Associate Administrator;

(ii) In addition to other requirements of this subchapter, the maximum filling density, service pressure, and pressure relief device for each cylinder conform to the requirements of this part for the gas involved; and

(iii) The bill of lading or other shipping paper identifies the cylinder and includes the following certification: “This cylinder has (These cylinders have) been qualified, as required, and filled in accordance with the DOT requirements for export.”

(6) Cylinders not equipped with pressure relief devices. A DOT specification or a UN cylinder manufactured, inspected, tested and marked in accordance with part 178 of this subchapter and otherwise conforms to the requirements of part 173 of this subchapter for the gas involved, except that the cylinder is not equipped with a pressure relief device may be filled with a gas and offered for transportation and transported for export if the following conditions are met:

(i) Each DOT specification cylinder or UN pressure receptacle must be plainly and durably marked “For Export Only”;

(ii) The shipping paper must carry the following certification: “This cylinder has (These cylinders have) been retested and refilled in accordance with the DOT requirements for export.”; and

(iii) The emergency response information provided with the shipment and available from the emergency response telephone contact person must indicate that the pressure receptacles are not fitted with pressure relief devices and provide appropriate guidance for exposure to fire.

(b) Conditions and requirements specific to certain materials —

(1) Aerosols. Except for a limited quantity of a compressed gas in a container of not more than 4 fluid ounces capacity meeting the requirements in § 173.306(a)(1) of this subchapter, the proper shipping name “Aerosol,” UN1950, may be used only for a non-refillable receptacle containing a gas compressed, liquefied, or dissolved under pressure the sole purpose of which is to expel a nonpoisonous (other than Division 6.1, Packing Group III material) liquid, paste, or powder and fitted with a self-closing release device (see § 171.8). In addition, an aerosol must be in a metal packaging when the packaging exceeds 7.22 cubic inches.

(2) Safety devices for vehicles, vessels or aircraft, e.g. air bag inflators, air bag modules, seat-belt pretensioners, and pyromechanical devices. For each safety device, the shipping paper description must conform to the requirements in § 173.166(c) of this subchapter.

(i) The EX number or product code must be included in association with the basic shipping description. When a product code is used, it must be traceable to the specific EX number assigned to the inflator, module or seat-belt pretensioner by the Associate Administrator. The EX number or product code is not required to be marked on the outside package.

(ii) The proper shipping name “Articles, pyrotechnic for technical purposes, UN0431" must be used for all air bag inflators, air bag modules, and seat-belt pretensioners meeting the criteria for a Division 1.4G material.

(3) Chemical oxygen generators. Chemical oxygen generators must be approved, classed, described, packaged, and transported in accordance with the requirements of this subchapter.

(4) Class 1 (explosive) materials. Prior to being transported, Class 1 (explosive) materials must be approved by the Associate Administrator in accordance with § 173.56 of this subchapter. Each package containing a Class 1 (explosive) material must conform to the marking requirements in § 172.320 of this subchapter.

(5) Hazardous substances. A material meeting the definition of a hazardous substance as defined in § 171.8, must conform to the shipping paper requirements in § 172.203(c) of this subchapter and the marking requirements in § 172.324 of this subchapter:

(i) The proper shipping name must identify the hazardous substance by name, or the name of the substance must be entered in parentheses in association with the basic description and marked on the package in association with the proper shipping name. If the hazardous substance meets the definition for a hazardous waste, the waste code (for example, D001), may be used to identify the hazardous substance;

(ii) The shipping paper and the package markings must identify at least two hazardous substances with the lowest reportable quantities (RQs) when the material contains two or more hazardous substances; and

(iii) The letters “RQ” must be entered on the shipping paper either before or after the basic description, and marked on the package in association with the proper shipping name for each hazardous substance listed.

(6) Hazardous wastes. A material meeting the definition of a hazardous waste (see § 171.8) must conform to the following:

(i) The shipping paper and the package markings must include the word “Waste” immediately preceding the proper shipping name;

(ii) The shipping paper must be retained by the shipper and by each carrier for three years after the material is accepted by the initial carrier (see § 172.205(e)(5)); and

(iii) A hazardous waste manifest must be completed in accordance with § 172.205 of this subchapter.

(7) Marine pollutants. Except for marine pollutants (see § 171.8) transported in accordance with the IMDG Code, marine pollutants transported in bulk packages must meet the shipping paper requirements in § 172.203(l) of this subchapter and the package marking requirements in § 172.322 of this subchapter.

(8) Organic peroxides. Organic peroxides not identified by technical name in the Organic Peroxide Table in § 173.225(c) of this subchapter must be approved by the Associate Administrator in accordance with § 173.128(d) of this subchapter.

(9) [Reserved]

(10) Poisonous by inhalation materials. A material poisonous by inhalation (see § 171.8) must conform to the following requirements:

(i) The words “Poison-Inhalation Hazard” or “Toxic-Inhalation Hazard” and the words “Zone A,” “Zone B,” “Zone C,” or “Zone D” for gases, or “Zone A” or “Zone B” for liquids, as appropriate, must be entered on the shipping paper immediately following the basic shipping description. The word “Poison” or “Toxic” or the phrase “Poison-Inhalation Hazard” or “Toxic-Inhalation Hazard” need not be repeated if it otherwise appears in the shipping description;

(ii) The material must be packaged in accordance with the requirements of this subchapter;

(iii) The package must be marked in accordance with § 172.313 of this subchapter; and

(iv) Except as provided in subparagraph (B) of this paragraph (b)(10)(iv) and for a package containing anhydrous ammonia prepared in accordance with the Transport Canada TDG Regulations, the package must be labeled or placarded with POISON INHALATION HAZARD or POISON GAS, as appropriate, in accordance with Subparts E and F of part 172 of this subchapter.

(A) For a package transported in accordance with the IMDG Code in a closed transport vehicle or freight container, a label or placard conforming to the IMDG Code specifications for a “Class 2.3" or “Class 6.1" label or placard may be substituted for the POISON GAS or POISON INHALATION HAZARD label or placard, as appropriate. The transport vehicle or freight container must be marked with the identification numbers for the hazardous material in the manner specified in § 172.313(c) of this subchapter and placarded as required by subpart F of part 172 of this subchapter.

(B) For a package transported in accordance with the Transport Canada TDG Regulations in a closed transport vehicle or freight container, a label or placard conforming to the TDG Regulations specifications for a “Class 2.3" or “Class 6.1" label or placard may be substituted for the POISON GAS or POISON INHALATION HAZARD label or placard, as appropriate. The transport vehicle or freight container must be marked with the identification numbers for the hazardous material in the manner specified in § 172.313(c) of this subchapter and placarded as required by subpart F of part 172 of this subchapter. While in transportation in the United States, the transport vehicle or freight container may

also be placarded in accordance with the appropriate TDG Regulations in addition to being placarded with the POISON GAS or POISON INHALATION HAZARD placards.

(11) Class 7 (radioactive) materials.

(i) Highway route controlled quantities (see § 173.403 of this subchapter) must be shipped in accordance with §§ 172.203(d)(4) and (d)(10); 172.507, and 173.22(c) of this subchapter;

(ii) For fissile materials and Type B, Type B(U), and Type B(M) packagings, the competent authority certification and any necessary revalidation must be obtained from the appropriate competent authorities as specified in §§ 173.471, 173.472, and 173.473 of this subchapter, and all requirements of the certificates and revalidations must be met;

(iii) Type A package contents are limited in accordance with § 173.431 of this subchapter;

(iv) The country of origin for the shipment must have adopted the edition of SSR-6 of the IAEA Regulations referenced in § 171.7.

(v) The shipment must conform to the requirements of § 173.448, when applicable;

(vi) The definition for “radioactive material” in § 173.403 of this subchapter must be applied to radioactive materials transported under the provisions of this subpart;

(vii) Except for limited quantities, the shipment must conform to the requirements of § 172.204(c)(4) of this subchapter; and

(viii) Excepted packages of radioactive material, instruments or articles, or articles containing natural uranium or thorium must conform to the requirements of §§ 173.421, 173.424, or 173.426 of this subchapter, as appropriate.

(ix) Packages containing fissile materials must conform to the requirements of § 173.453 to be otherwise excepted from the requirements of Subpart I of Part 173 for fissile materials.

(12) Self-reactive materials. Self-reactive materials not identified by technical name in the Self-reactive Materials Table in § 173.224(b) of this subchapter must be approved by the Associate Administrator in accordance with § 173.124(a)(2)(iii) of this subchapter.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[72 FR 25162, 25172, May 3, 2007; 72 FR 55678, 55684, Oct. 1, 2007; 73 FR 57001, 57004, Oct. 1, 2008; 76 FR 3308, Jan. 19, 2011; 76 FR 56304, 56311, Sept. 13, 2011; 78 FR 60745, 60751, Oct. 2, 2013; 78 FR 65454, 65468, Oct. 31, 2013; 80 FR 1076, 1116, Jan. 8, 2015; 80 FR 72914, 72920, Nov. 23, 2015; 81 FR 35484, 35513, June 2, 2016; 82 FR 15796, 15837, Mar. 30, 2017; 85 FR 75680, 75705, Nov. 25, 2020; 85 FR 85380, 85416, Dec. 28, 2020; 87 FR 44944, 44982, July 26, 2022]

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§ 171.24 Additional requirements for the use of the ICAO Technical Instructions.

(a) A hazardous material that is offered for transportation or transported within the United States by aircraft, and by motor vehicle or rail either before or after being transported by aircraft in accordance with the ICAO Technical Instructions (IBR, see § 171.7), as authorized in paragraph (a) of § 171.22, must conform to the requirements in § 171.22, as applicable, and this section.

(b) Any person who offers for transportation or transports a hazardous material in accordance with the ICAO Technical Instructions must comply with the following additional conditions and requirements:

(1) All applicable requirements in parts 171 and 175 of this subchapter (also see 14 CFR 121.135, 121.401, 121.433a, 135.323, 135.327 and 135.333);

(2) The quantity limits prescribed in the ICAO Technical Instructions for transportation by passenger-carrying or cargo aircraft, as applicable;

(3) The conditions or requirements of a United States variation, when specified in the ICAO Technical Instructions.

(c) Highway transportation. For transportation by highway prior to or after transportation by aircraft, a shipment must conform to the applicable requirements of part 177 of this subchapter, and the motor vehicle must be placarded in accordance with subpart F of part 172 of this subchapter.

(d) Conditions and requirements specific to certain materials. Hazardous materials offered for transportation or transported in accordance with the ICAO Technical Instructions must conform to the following specific conditions and requirements, as applicable:

(1) Batteries —

(i) Nonspillable wet electric storage batteries. Nonspillable wet electric storage batteries are not subject to the requirements of this subchapter provided —

(A) The battery meets the conditions specified in Special Provision 67 of the ICAO Technical Instructions;

(B) The battery, its outer packaging, and any overpack are plainly and durably marked "NONSPILLABLE" or "NONSPILLABLE BATTERY"; and

(C) The batteries or battery assemblies are offered for transportation or transported in a manner that prevents short circuiting or forced discharge, including, but not limited to, protection of exposed terminals.

(ii) Lithium cells and batteries. Lithium metal cells and batteries (UN3090) and lithium ion cells and batteries (UN3480) are forbidden for transport as cargo aboard passenger-carrying aircraft. The outside of each package that contains lithium metal cells or batteries transported in accordance with Packing Instruction 968, Section II or lithium ion cells or batteries transported in accordance with Packing Instruction 965, Section II must be appropriately marked: “PRIMARY LITHIUM BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT”, “LITHIUM METAL BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT”, “LITHIUM ION BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT”, or “LITHIUM BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT”, or labeled with a CARGO AIRCRAFT ONLY label as specified in § 172.448 of this subchapter. When placed in an overpack, the selected mark or label must either be clearly visible through the overpack, or the marking or label must be affixed on the outside of the overpack.

(iii) Low production runs or prototypes lithium cells or batteries. Production runs consisting of not more than 100 lithium cells or batteries per year, or prototype lithium cells or batteries (including cells or batteries packed with, or contained in, equipment or motor vehicles) not of a type proven to meet the requirements of section 38.3 of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter), must be approved by the Associate Administrator prior to transportation aboard aircraft.

(2) A package containing Oxygen, compressed, or any of the following oxidizing gases must be packaged as required by Parts 173 and 178 of this subchapter: carbon dioxide and oxygen mixtures, compressed; compressed gas, oxidizing, n.o.s.; liquefied gas, oxidizing, n.o.s.; nitrogen trifluoride; and nitrous oxide.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[72 FR 25162, 25172, May 3, 2007; 72 FR 44930, 44947, Aug. 9, 2007; 72 FR 55091, 55097, Sept. 28, 2007; 79 FR 46012, 46034, Aug. 6, 2014; 80 FR 1076, 1116, Jan. 8, 2015; 80 FR 9217, Feb. 20, 2015; 80 FR 72914, 72920, Nov. 23, 2015; 87 FR 77995, 78010, Dec. 21 , 2022]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.25 Additional requirements for the use of the IMDG Code.

(a) A hazardous material may be offered for transportation or transported to, from or within the United States by vessel, and by motor carrier and rail in accordance with the IMDG Code (IBR, see § 171.7), as authorized in § 171.22, provided all or part of the movement is by vessel. Such shipments must conform to the requirements in § 171.22, as applicable, and this section.

(b) Any person who offers for transportation or transports a hazardous material in accordance with the IMDG Code must conform to the following additional conditions and requirements:

(1) Unless specified otherwise in this subchapter, a shipment must conform to the requirements in part 176 of this subchapter. For transportation by rail or highway prior to or subsequent to transportation by vessel, a shipment must conform to the applicable requirements of parts 174 and 177 respectively, of this subchapter, and the motor vehicle or rail car must be placarded in accordance with subpart F of part 172 of this subchapter. When a hazardous material regulated by this subchapter for transportation by highway is transported by motor vehicle on a public highway or by rail under the provisions of subpart C of part 171, the segregation requirements of Part 7, Chapter 7.2 of the IMDG Code are authorized.

(2) For transportation by vessel, the stowage and segregation requirements in Part 7 of the IMDG Code may be substituted for the stowage and segregation requirements in part 176 of this subchapter.

(3) The outside of each package containing lithium metal cells or batteries (UN3090) or lithium ion cells or batteries (UN3480) transported in accordance with special provision 188 of the IMDG Code must be appropriately marked "PRIMARY LITHIUM BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT", "LITHIUM METAL BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT", "LITHIUM ION BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT", or "LITHIUM BATTERIES—FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT", or labeled with a CARGO AIRCRAFT ONLY label as specified in § 172.448 of this subchapter. The provisions of this paragraph also apply to packages of lithium cells or batteries packed with, or contained in, equipment that exceed 5 kg (11 pounds) net weight. When placed in an overpack, the selected marking or label must either be clearly visible through the overpack, or the marking or label must also be affixed on the outside of the overpack.

(4) Material consigned under UN3166 and UN3171 (e.g., Engines, internal combustion, etc., Vehicles, etc. and Battery-powered equipment) may be prepared in accordance with the IMDG Code or this subchapter.

(c) Conditions and requirements for bulk packagings. Except for IBCs and UN portable tanks used for the transportation of liquids or solids, bulk packagings must conform to the requirements of this subchapter. Additionally, the following requirements apply:

(1) UN portable tanks must conform to the requirements in Special Provisions TP37, TP38, TP44 and TP45 when applicable, and any applicable bulk special provisions assigned to the hazardous material in the Hazardous Materials Table in § 172.101 of this subchapter;

(2) IMO Type 5 portable tanks must conform to DOT Specification 51 or UN portable tank requirements, unless specifically authorized in this subchapter or approved by the Associate Administrator;

(3) Except as specified in this subpart, for a material poisonous (toxic) by inhalation, the T Codes specified in Column 13 of the Dangerous Goods List in the IMDG Code may be applied to the transportation of those materials in IM, IMO and DOT Specification 51 portable tanks, when these portable tanks are authorized in accordance with the requirements of this subchapter; and

(4) No person may offer an IM or UN portable tank containing liquid hazardous materials of Class 3, PG I or II, or PG III with a flash point less than 100° F (38° C); Division 5.1, PG I or II; or Division 6.1, PG I or II, for unloading while it remains on a transport vehicle with the motive power unit attached, unless it conforms to the requirements in § 177.834(o) of this subchapter.

(d) Use of IMDG Code in port areas.

(1) Except for Division 1.1, 1.2, and Class 7 materials, a hazardous material being imported into or exported from the United States or passing through the United States in the course of being shipped between locations outside the United States may be offered and accepted for transportation and transported by motor vehicle within a single port area, including contiguous harbors, when packaged, marked, classed, labeled, stowed and segregated in accordance with the IMDG Code, offered and accepted in accordance with the requirements of subparts C and F of part 172 of this subchapter pertaining to shipping papers and placarding, and otherwise conforms to the applicable requirements of part 176 of this subchapter.

(2) The requirement in § 172.201(d) of this subchapter for an emergency telephone number does not apply to shipments made in accordance with the IMDG Code if the hazardous material is not offloaded from the vessel, or is offloaded between ocean vessels at a U.S. port facility without being transported by public highway.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[72 FR 25162, 25172, May 3, 2007; 72 FR 44930, 44947, Aug. 9, 2007; 73 FR 57001, 57004, Oct. 1, 2008; 74 FR 2200, 2233, Jan. 14, 2009; 76 FR 3308, Jan. 19, 2011; 79 FR 46012, 46034, Aug. 6, 2014; 80 FR 1076, 1116, Jan. 8, 2015; 80 FR 9217, Feb. 20, 2015; 87 FR 77995, 78010, Dec. 21 , 2022]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 171.26 Additional requirements for the use of the IAEA Regulations.

A Class 7 (radioactive) material being imported into or exported from the United States or passing through the United States in the course of being shipped between places outside the United States may be offered for transportation or transported in accordance with the IAEA Regulations (IBR, see § 171.7) as authorized in paragraph (a) of § 171.22, provided the requirements in § 171.22, as applicable, are met.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 171

History

[72 FR 25162, 25172, May 3, 2007]

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49 CFR 172.1

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 172.1 Purpose and scope.

This part lists and classifies those materials which the Department has designated as hazardous materials for purposes of transportation and prescribes the requirements for shipping papers, package marking, labeling, and transport vehicle placarding applicable to the shipment and transportation of those hazardous materials.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 172

History

[Amdt. 172-29, 41 FR 15997, Apr. 15, 1976; 66 FR 45376, 45379, Aug. 28, 2001]

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49 CFR 172.3

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 172.3 Applicability.

(a) This part applies to —

(1) Each person who offers a hazardous material for transportation, and

(2) Each carrier by air, highway, rail, or water who transports a hazardous material.

(b) When a person, other than one of those provided for in paragraph (a) of this section, performs a packaging labeling or marking function required by this part, that person shall perform the function in accordance with this part.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 172

History

[Amdt. 172-29, 41 FR 15996, Apr. 15, 1976, as amended by Amdt. 172-32, 41 FR 38179, Sept. 9, 1976]

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49 CFR 172.101

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

LEXISNEXIS' CODE OF FEDERAL REGULATIONS > Title 49 Transportation > Subtitle B — Other Regulations Relating to Transportation > Chapter I — Pipeline and Hazardous Materials Safety Administration, Department of Transportation > Subchapter C — Hazardous Materials Regulations > Part 172 — Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, Training Requirements, and Security Plans > Subpart B — Table of Hazardous Materials and Special Provisions

Notice

. This section has more than one version with varying effective dates.

§ 172.101 Purpose and use of hazardous materials table. [Effective until October 31, 2023]

[PUBLISHER'S NOTE: Because of their size and complexity, the Hazardous Materials table in paragraph (l)(3) and the tables in Appendices A and B cannot be efficiently reproduced on LEXIS. The tables are amended frequently, and recent amendments have been subject to multiple delayed effective dates. For these reasons, these tables do not appear on LEXIS. See the version of the table in the latest edition of the CFR book and consult the List of CFR Sections Affected for subsequent amendments.]

[PUBLISHER'S NOTE: From October 2, 2012, through the present, the versions of the Hazardous Materials tables in paragraph (l)(3) and the tables in Appendices A and B, as they appear in the 2012 Government Printing Office (GPO) edition of the CFR, have been amended at the following Federal Register citations: 77 FR 60935, 60940, Oct. 5, 2012; 78 FR 988, 1033, Jan. 7, 2013, as corrected at 78 FR 8431, Feb. 6, 2013; 78 FR 14702, 14712, Mar. 7, 2013, as corrected at 78 FR 17874, Mar. 25, 2013; 78 FR 15303, 15322, Mar. 11, 2013; 78 FR 42457, 42475, July 16, 2013; 78 FR 60745, 60751, Oct. 2, 2013; 78 FR 65454, 65469, Oct. 31, 2013; 78 FR 69310, Nov. 19, 2013; 79 FR 15033, 15043, Mar. 18, 2014; 79 FR 46012, 46034, Aug. 6, 2014; 80 FR 1076, 1116, Jan. 8, 2015; 80 FR 72914, 72920, Nov. 23, 2015; 80 FR 79424, 79449, Dec. 21, 2015; 81 FR 3636, 3665, Jan. 21, 2016; 81 FR 35484, 35513, June 2, 2016; 82 FR 15796, 15838, Mar. 30, 2017; 83 FR 28162, June 18, 2018; 83 FR 52878, 52891, Oct. 18, 2018; 83 FR 54683, Oct. 31, 2018; 84 FR 8006, 8027, Mar. 6, 2019; 85 FR 27810, 27853, May 11, 2020; 85 FR 44994, 45028, July 24, 2020; 85 FR 75680, Nov. 25, 2020; 85 FR 83375, Dec. 21, 2020; 87 FR 44944, 44982, July 26, 2022; 87 FR 79752, 79766, Dec. 27, 2022, as corrected at 88 FR 4756, Jan. 25, 2023.]

(a) The Hazardous Materials Table (Table) in this section designates the materials listed therein as hazardous materials for the purpose of transportation of those materials. For each listed material, the Table identifies the hazard class or specifies that the material is forbidden in transportation, and gives the proper shipping name or directs the user to the preferred proper shipping name. In addition, the Table specifies or references requirements in this subchapter pertaining to labeling, packaging, quantity limits aboard aircraft and stowage of hazardous materials aboard vessels.

(b) Column 1: Symbols. Column 1 of the Table contains six symbols ("+", "A", "D", "G", "I" and "W" as follows:

(1) The plus (+) sign fixes the proper shipping name, hazard class and packing group for that entry without regard to whether the material meets the definition of that class, packing group or any other hazard class definition. When the plus sign is assigned to a proper shipping name in Column (1) of the § 172.101 Table, it means that the material is known to pose a risk to humans. When a plus sign is assigned to mixtures or solutions containing a material where the hazard to humans is significantly different from that of the pure material or where no hazard to humans is posed, the material may be described using an alternative shipping name that represents the hazards posed by the material. An appropriate alternate proper shipping name and hazard class may be authorized by the Associate Administrator.

(2) The letter “A” denotes a material that is subject to the requirements of this subchapter only when offered or intended for transportation by aircraft, unless the material is a hazardous substance or a hazardous waste. A shipping description entry preceded by an “A” may be used to describe a material for other modes of transportation provided all applicable requirements for the entry are met.

(3) The letter “D” identifies proper shipping names which are appropriate for describing materials for domestic transportation but may be inappropriate for international transportation under the provisions of international regulations (e.g., IMO, ICAO). An alternate proper shipping name may be selected when either domestic or international transportation is involved.

(4) The letter “G” identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description. (See § 172.203(k).)

(5) The letter “I” identifies proper shipping names which are appropriate for describing materials in international transportation. An alternate proper shipping name may be selected when only domestic transportation is involved.

(6) The letter “W” denotes a material that is subject to the requirements of this subchapter only when offered or intended for transportation by vessel, unless the material is a hazardous substance or a hazardous waste. A shipping description entry preceded by a “W” may be used to describe a material for other modes of transportation provided all applicable requirements for the entry are met.

(c) Column 2: Hazardous materials descriptions and proper shipping names. Column 2 lists the hazardous materials descriptions and proper shipping names of materials designated as hazardous materials. Modification of a proper shipping name may otherwise be required or authorized by this section. Proper shipping names are limited to those shown in Roman type (not italics).

(1) Proper shipping names may be used in the singular or plural and in either capital or lower case letters. Words may be alternatively spelled in the same manner as they appear in the ICAO Technical Instructions or the IMDG Code. For example “aluminum” may be spelled “aluminium” and “sulfur” may be spelled “sulphur”. However, the word “inflammable” may not be used in place of the word “flammable”.

(2) Punctuation marks and words in italics are not part of the proper shipping name, but may be used in addition to the proper shipping name. The word “or” in italics indicates that there is a choice of terms in the sequence that may alternately be used as the proper shipping name or as part of the proper shipping name, as appropriate. For example, for the hazardous materials description “Carbon dioxide, solid or Dry ice” either “Carbon dioxide, solid” or “Dry ice” may be used as the proper shipping name; and for the hazardous materials description “Articles, pressurized pneumatic or hydraulic,” either “Articles, pressurized pneumatic” or “Articles, pressurized hydraulic” may be used as the proper shipping name.

(3) The word “poison” or “poisonous” may be used interchangeably with the word “toxic” when only domestic transportation is involved. The abbreviation “n.o.i.” or “n.o.i.b.n.” may be used interchangeably with “n.o.s.”.

(4) Except for hazardous wastes, when qualifying words are used as part of the proper shipping name, their sequence in the package markings and shipping paper description is optional. However, the entry in the Table reflects the preferred sequence.

(5) When one entry references another entry by use of the word “see”, if both names are in Roman type, either name may be used as the proper shipping name (e.g., Ethyl alcohol, see Ethanol).

(6) When a proper shipping name includes a concentration range as part of the shipping description, the actual concentration, if it is within the range stated, may be used in place of the concentration range. For example, an aqueous solution of hydrogen peroxide containing 30 percent peroxide may be described as “Hydrogen peroxide, aqueous solution with not less than 20 percent but not more than 40 percent hydrogen peroxide” or “Hydrogen peroxide, aqueous solution with 30 percent hydrogen peroxide. ” Also, the percent sign (%) may be used in place of the word “percent” when words in italics containing the word “percent” are used in addition to the proper shipping name.

(7) Use of the prefix “mono” is optional in any shipping name, when appropriate. Thus, Iodine monochloride may be used interchangeably with Iodine chloride. In “Glycerol alpha-monochlorohydrin” the term “mono” is considered a prefix to the term “chlorohydrin” and may be deleted.

(8) Use of the word “liquid” or “solid”. The word “liquid” or “solid” may be added to a proper shipping name when a hazardous material specifically listed by name may, due to differing physical states, be a liquid or solid. When the packaging specified in Column 8 is inappropriate for the physical state of the material, the table provided in paragraph (i)(4) of this section should be used to determine the appropriate packaging section.

(9) Hazardous wastes. If the word “waste” is not included in the hazardous material description in Column 2 of the Table, the proper shipping name for a hazardous waste (as defined in § 171.8 of this subchapter), shall include the word “Waste” preceding the proper shipping name of the material. For example: Waste acetone.

(10) Mixtures and solutions

(i) A mixture or solution meeting the definition of one or more hazard class that is not identified specifically by name, comprised of a single predominant hazardous material identified in the Table by technical name and one or more hazardous and/or non-hazardous material, must be described using the proper shipping name of the hazardous material and the qualifying word “mixture” or “solution”, as appropriate, unless—

(A) Except as provided in § 172.101(i)(4) the packaging specified in Column 8 is inappropriate to the physical state of the material;

(B) The shipping description indicates that the proper shipping name applies only to the pure or technically pure hazardous material;

(C) The hazard class, packing group, or subsidiary hazard of the mixture or solution is different from that specified for the entry;

(D) There is a significant change in the measures to be taken in emergencies;

(E) The material is identified by special provision in Column 7 of the § 172.101 Table as a material poisonous by inhalation; however, it no longer meets the definition of poisonous by inhalation or it falls within a different hazard zone than that specified in the special provision; or

(F) The material can be appropriately described by a shipping name that describes its intended application, such as “Coating solution”, “Extracts, flavoring” or “Compound, cleaning liquid.”

(ii) If one or more of the conditions in paragraphs (c)(10)(i)(A) through (F) of this section is satisfied then the proper shipping name selection process in (c)(12)(ii) must be used.

(iii) A mixture or solution meeting the definition of one or more hazard class that is not identified in the Table specifically by name, comprised of two or more hazardous materials in the same hazard

class, must be described using an appropriate shipping description (e.g., “Flammable liquid, n.o.s.”). The name that most appropriately describes the material shall be used; e.g., an alcohol not listed by its technical name in the Table shall be described as “Alcohol, n.o.s.” rather than “Flammable liquid, n.o.s.”. Some mixtures may be more appropriately described according to their application, such as “Coating solution” or “Extracts, flavoring liquid” rather than by an n.o.s. entry. Under the provisions of subparts C and D of this part, the technical names of at least two components most predominately contributing to the hazards of the mixture or solution may be required in association with the proper shipping name.

(11) Except for a material subject to or prohibited by § 173.21, 173.54, 173.56(d), 173.56(e), 173.224(c) or 173.225(b) of this subchapter, a material that is considered to be a hazardous waste or a sample of a material for which the hazard class is uncertain and must be determined by testing may be assigned a tentative proper shipping name, hazard class, identification number and packing group, if applicable, based on the shipper’s tentative determination according to:

(i) Defining criteria in this subchapter;

(ii) The hazard precedence prescribed in § 173.2a of this subchapter;

(iii) The shipper’s knowledge of the material;

(iv) In addition to paragraphs (c)(11)(i) through (iii) of this section, for a sample of a material other than a waste, the following must be met:

(A) Except when the word “Sample” already appears in the proper shipping name, the word “Sample” must appear as part of the proper shipping name or in association with the basic description on the shipping paper.

(B) When the proper shipping description for a sample is assigned a “G” in Column (1) of the § 172.101 Table, and the primary constituent(s) for which the tentative classification is based are not known, the provisions requiring a technical name for the constituent(s) do not apply; and

(C) A sample must be transported in a combination packaging that conforms to the requirements of this subchapter that are applicable to the tentative packing group assigned, and may not exceed a net mass of 2.5 kg (5.5 pounds) per package.

Note to Paragraph (c)(11): For the transportation of samples of self-reactive materials, organic peroxides, explosives or lighters, See §§ 173.224(c)(3), 173.225(c)(2), 173.56(d) or 173.308(b)(2) of this subchapter, respectively.

(12) Except when the proper shipping name in the Table is preceded by a plus (+) —

(i) If it is specifically determined that a material meets the definition of a hazard class, packing group or hazard zone, other than the class, packing group or hazard zone shown in association with the proper shipping name, or does not meet the defining criteria for a subsidiary hazard shown in Column 6 of the Table, the material shall be described by an appropriate proper shipping name listed in association with the correct hazard class, packing group, hazard zone, or subsidiary hazard for the material.

(ii) Generic or n.o.s. descriptions. If an appropriate technical name is not shown in the Table, selection of a proper shipping name shall be made from the generic or n.o.s. descriptions corresponding to the specific hazard class, packing group, hazard zone, or subsidiary hazard, if any, for the material. The name that most appropriately describes the material shall be used; e.g., an alcohol not listed by its technical name in the Table shall be described as “Alcohol, n.o.s.” rather than “Flammable liquid, n.o.s.”. Some mixtures may be more appropriately described according to their application, such as “Coating solution” or “Extracts, flavoring, liquid”, rather than by an n.o.s. entry, such as “Flammable liquid, n.o.s.” It should be noted, however, that an n.o.s. description as a proper shipping name may not provide sufficient information for shipping papers and package markings. Under the provisions of subparts C and D of this part, the technical name of one or more

constituents which makes the product a hazardous material may be required in association with the proper shipping name.

(iii) Multiple hazard materials. If a material meets the definition of more than one hazard class, and is not identified in the Table specifically by name (e.g., acetyl chloride), the hazard class of the material shall be determined by using the precedence specified in § 173.2a of this subchapter, and an appropriate shipping description (e.g., “Flammable liquid, corrosive n.o.s.”) shall be selected as described in paragraph (c)(12)(ii) of this section.

(iv) If it is specifically determined that a material is not a forbidden material and does not meet the definition of any hazard class, the material is not a hazardous material.

(13) Self-reactive materials and organic peroxides. A generic proper shipping name for a self-reactive material or an organic peroxide, as listed in Column 2 of the Table, must be selected based on the material’s technical name and concentration, in accordance with the provisions of §§ 173.224 or 173.225 of this subchapter, respectively.

(14) A proper shipping name that describes all isomers of a material may be used to identify any isomer of that material if the isomer meets criteria for the same hazard class or division, subsidiary risk(s) and packing group, unless the isomer is specifically identified in the Table.

(15) Unless a hydrate is specifically listed in the Table, a proper shipping name for the equivalent anhydrous substance may be used, if the hydrate meets the same hazard class or division, subsidiary risk(s) and packing group.

(16) Unless it is already included in the proper shipping name in the § 172.101 Table, the qualifying words “liquid” or “solid” may be added in association with the proper shipping name when a hazardous material specifically listed by name in the § 172.101 Table may, due to the differing physical states of the various isomers of the material, be either a liquid or a solid (for example “Dinitrotoluenes, liquid” and “Dinitrotoluenes, solid”). Use of the words “liquid” or “solid” is subject to the limitations specified for the use of the words “mixture” or “solution” in paragraph (c)(10) of this section. The qualifying word “molten” may be added in association with the proper shipping name when a hazardous material, which is a solid in accordance with the definition in § 171.8 of this subchapter, is offered for transportation in the molten state (for example, “Alkylphenols, solid, n.o.s., molten”).

(17) Unless it is already included in the proper shipping name in the § 172.101 Table, the qualifying word ‘‘stabilized’’ may be added in association with the proper shipping name, as appropriate, where without stabilization the substance would be forbidden for transportation according to § 173.21(f) of this subchapter.

(d) Column 3: Hazard class or Division. Column 3 contains a designation of the hazard class or division corresponding to each proper shipping name, or the word “Forbidden”.

(1) A material for which the entry in this column is “Forbidden” may not be offered for transportation or transported. This prohibition does not apply if the material is diluted, stabilized or incorporated in a device and it is classed in accordance with the definitions of hazardous materials contained in part 173 of this subchapter.

(2) When a reevaluation of test data or new data indicates a need to modify the “Forbidden” designation or the hazard class or packing group specified for a material specifically identified in the Table, this data should be submitted to the Associate Administrator.

(3) A basic description of each hazard class and the section reference for class definitions appear in § 173.2 of this subchapter.

(4) Each reference to a Class 3 material is modified to read “Combustible liquid” when that material is reclassified in accordance with § 173.150(e) or (f) of this subchapter or has a flash point above 60° C (140° F) but below 93° C (200° F).

(e) Column 4: Identification number. Column 4 lists the identification number assigned to each proper shipping name. Those preceded by the letters “UN” are associated with proper shipping names considered appropriate for international transportation as well as domestic transportation. Those preceded by the letters “NA” are associated with proper shipping names not recognized for transportation outside of the United States. Identification numbers in the “NA9000” series are associated with proper shipping names not appropriately covered by international hazardous materials (dangerous goods) transportation standards, or not appropriately addressed by international transportation standards for emergency response information purposes, except for transportation in the United States. Those preceded by the letters “ID” are associated with proper shipping names recognized by the ICAO Technical Instructions (see § 171.7 of this subchapter for availability).

(f) Column 5: Packing group. Column 5 specifies one or more packing groups assigned to a material corresponding to the proper shipping name and hazard class for that material. Class 2, Class 7, and Division 6.2 do not have packing groups. Articles in classes other than Class 1 are not assigned to packing groups. For packing purposes, any requirement for a specific packaging performance level is set out in the applicable packing authorizations of part 173. Packing Groups I, II, and III indicate the degree of danger presented by the material is great, medium, or minor, respectively. If more than one packing group is indicated for an entry, the packing group for the hazardous material is determined using the criteria for assignment of packing groups specified in subpart D of part 173. When a reevaluation of test data or new data indicates a need to modify the specified packing group(s), the data should be submitted to the Associate Administrator. Each reference in this column to a material that is a hazardous waste or a hazardous substance, and whose proper shipping name preceded in Column 1 of the Table by the letter “A” or “W,” is modified to read “III” on those occasions when the material is offered for transportation or transported by a mode in which its transportation is not otherwise subject to requirements of this subchapter.

(g) Column 6: Labels. Column 6 specifies codes which represent the hazard warning labels required for a package filled with a material conforming to the associated hazard class and proper shipping name, unless the package is otherwise excepted from labeling by a provision in subpart E of this part, or part 173 of this subchapter. The first code is indicative of the primary hazard of the material. Additional label codes are indicative of subsidiary hazards. Provisions in § 172.402 may require that a label other than that specified in Column 6 be affixed to the package in addition to that specified in Column 6. No label is required for a material classed as a combustible liquid or for a Class 3 material that is reclassed as a combustible liquid. For “Empty” label requirements, see § 173.428 of this subchapter. The codes contained in Column 6 are defined according to the following table:

LABEL SUBSTITUTION TABLE

Label code	Label name
1	Explosive.
1.1 [1]	Explosive 1.1 [1]
1.2 [1]	Explosive 1.2 [1]
1.3 [1]	Explosive 1.3 [1]
1.4 [1]	Explosive 1.4 [1]

[1] Refers to the appropriate compatibility group letter.

[1] Refers to the appropriate compatibility group letter.

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[1] Refers to the appropriate compatibility group letter.

[1] Refers to the appropriate compatibility group letter.

[1] Refers to the appropriate compatibility group letter.

§ 172.101 Purpose and use of hazardous materials table. [Effective until October 31, 2023]

LABEL SUBSTITUTION TABLE

Label code	Label name
1.5 [1]	Explosive 1.5 [1]
1.6 [1]	Explosive 1.6 [1]
2.1	Flammable Gas
2.2	Non-Flammable Gas
2.3	Poison Gas
3	Flammable Liquid
4.1	Flammable Solid
4.2	Spontaneously Combustible
4.3	Dangerous When Wet
5.1	Oxidizer
5.2	Organic Peroxide
6.1 (inhalation hazard, Zone A or B).	Poison Inhalation Hazard
6.1 (other than inhalation hazard, Zone A or B) [2].	Poison
6.2	Infectious substance
7	Radioactive
8	Corrosive
9	Class 9

(h) Column 7: Special provisions. Column 7 specifies codes for special provisions applicable to hazardous materials. When Column 7 refers to a special provision for a hazardous material, the meaning and requirements of that special provision are as set forth in § 172.102 of this subpart.

(i) Column 8: Packaging authorizations. Columns 8A, 8B and 8C specify the applicable sections for exceptions, non-bulk packaging requirements and bulk packaging requirements, respectively, in part 173 of this subchapter. Columns 8A, 8B and 8C are completed in a manner which indicates that "§ 173." precedes the designated numerical entry. For example, the entry "202" in Column 8B associated with the proper shipping name "Gasoline" indicates that for this material conformance to non-bulk packaging requirements prescribed in § 173.202 of this subchapter is required. When packaging requirements are specified, they are in addition to the standard requirements for all packagings prescribed in § 173.24 of this subchapter and any other applicable requirements in subparts A and B of part 173 of this subchapter.

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[1] Refers to the appropriate compatibility group letter.

[1] Refers to the appropriate compatibility group letter.

[1] Refers to the appropriate compatibility group letter.

[1] Refers to the appropriate compatibility group letter.

[1] Refers to the appropriate compatibility group letter.

[1] Refers to the appropriate compatibility group letter.

[2] The packing group for a material is indicated in column 5 of the table.

§ 172.101 Purpose and use of hazardous materials table. [Effective until October 31, 2023]

(1) Exceptions. Column 8A contains exceptions from some of the requirements of this subchapter. The referenced exceptions are in addition to those specified in subpart A of part 173 and elsewhere in this subchapter. A “None” in this column means no packaging exceptions are authorized, except as may be provided by special provisions in Column 7.

(2) Non-bulk packaging. Column 8B references the section in part 173 of this subchapter which prescribes packaging requirements for non-bulk packagings. A “None” in this column means non-bulk packagings are not authorized, except as may be provided by special provisions in Column 7. Each reference in this column to a material which is a hazardous waste or a hazardous substance, and whose proper shipping name is preceded in Column 1 of the Table by the letter “A” or “W”, is modified to include “§ 173.203” or “§ 173.213”, as appropriate for liquids and solids, respectively, on those occasions when the material is offered for transportation or transported by a mode in which its transportation is not otherwise subject to the requirements of this subchapter.

(3) Bulk packaging. Column (8C) specifies the section in part 173 of this subchapter that prescribes packaging requirements for bulk packagings, subject to the limitations, requirements, and additional authorizations of Columns (7) and (8B). A “None” in Column (8C) means bulk packagings are not authorized, except as may be provided by special provisions in Column (7) and in packaging authorizations Column (8B). Additional authorizations and limitations for use of UN portable tanks are set forth in Column 7. For each reference in this column to a material that is a hazardous waste or a hazardous substance, and whose proper shipping name is preceded in Column 1 of the Table by the letter “A” or “W” and that is offered for transportation or transported by a mode in which its transportation is not otherwise subject to the requirements of this subchapter:

(i) The column reference is § 173.240 or § 173.241, as appropriate.

(ii) For a solid material, the exception provided in special provision B54 is applicable.

(iii) For a Class 9 material, which meets the definition of an elevated temperature material, the column reference is § 173.247.

(4) For a hazardous material which is specifically named in the Table and whose packaging sections specify packagings not applicable to the form of the material (e.g., packaging specified is for solid material and the material is being offered for transportation in a liquid form) the following table should be used to determine the appropriate packaging section:

Packaging section reference for solid materials	**Corresponding packaging section for liquid materials**
§ 173.187	§ 173.181
§ 173.211	§ 173.201
§ 173.212	§ 173.202
§ 173.213	§ 173.203
§ 173.240	§ 173.241
§ 173.242	§ 173.243

(5) Cylinders. For cylinders, both non-bulk and bulk packaging authorizations are set forth in Column (8B). Notwithstanding a designation of “None” in Column (8C), a bulk cylinder may be used when specified through the section reference in Column (8B).

(j) Column 9: Quantity limitations. Columns 9A and 9B specify the maximum quantities that may be offered for transportation in one package by passenger-carrying aircraft or passenger-carrying rail car (Column 9A) or by cargo aircraft only (Column 9B), subject to the following:

(1) “Forbidden” means the material may not be offered for transportation or transported in the applicable mode of transport.

(2) The quantity limitation is “net” except where otherwise specified, such as for “Consumer commodity” which specifies “30 kg gross.”

(3) When articles or devices are specifically listed by name, the net quantity limitation applies to the entire article or device (less packaging and packaging materials) rather than only to its hazardous components.

(4) A package offered or intended for transportation by aircraft and which is filled with a material forbidden on passenger-carrying aircraft but permitted on cargo aircraft only, or which exceeds the maximum net quantity authorized on passenger-carrying aircraft, shall be labelled with the CARGO AIRCRAFT ONLY label specified in § 172.448 of this part.

(5) The total net quantity of hazardous material for an outer non-bulk packaging that contains more than one hazardous material may not exceed the lowest permitted maximum net quantity per package as shown in Column 9A or 9B, as appropriate. If one material is a liquid and one is a solid, the maximum net quantity must be calculated in kilograms. See § 173.24a(c)(1)(iv).

(k) Column 10: Vessel stowage requirements. Column 10A [Vessel stowage] specifies the authorized stowage locations on board cargo and passenger vessels. Column 10B [Other provisions] specifies codes for stowage and handling requirements for specific hazardous materials. Hazardous materials offered for transportation as limited quantities are allocated stowage category A and are not subject to the stowage codes assigned by column 10B. The meaning of each code in Column 10B is set forth in § 176.84 of this subchapter. Section 176.63 of this subchapter sets forth the physical requirements for each of the authorized locations listed in Column 10A. (For bulk transportation by vessel, see 46 CFR parts 30 to 40, 70, 98, 148, 151, 153 and 154.) The authorized stowage locations specified in Column 10A are defined as follows:

(1) Stowage category “A” means the material may be stowed “on deck” or “under deck” on a cargo vessel or on a passenger vessel.

(2) Stowage category “B” means—

(i) The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and

(ii) “On deck only” on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

(3) Stowage category “C” means the material must be stowed “on deck only” on a cargo vessel or on a passenger vessel.

(4) Stowage category “D” means the material must be stowed “on deck only” on a cargo vessel or on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on a passenger vessel in which the limiting number of passengers is exceeded.

(5) Stowage category “E” means the material may be stowed “on deck” or “under deck” on a cargo vessel or on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on a passenger vessel in which the limiting number of passengers is exceeded.

(6) Stowage category “01” means the material may be stowed “on deck” in closed cargo transport units or “under deck” on a cargo vessel (up to 12 passengers) or on a passenger vessel.

(7) Stowage category “02” means the material may be stowed “on deck” in closed cargo transport units or “under deck” on a cargo vessel (up to 12 passengers) or “on deck” in closed cargo transport units or “under deck” in closed cargo transport units on a passenger vessel.

§ 172.101 Purpose and use of hazardous materials table. [Effective until October 31, 2023]

(8) Stowage category “03” means the material may be stowed “on deck” in closed cargo transport units or “under deck” on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(9) Stowage category “04” means the material may be stowed “on deck” in closed cargo transport units or “under deck” in closed cargo transports on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(10) Stowage category “05” means the material may be stowed “on deck” in closed cargo transport units on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(*l*) Changes to the Table.

(1) Unless specifically stated otherwise in a rule document published in the FEDERAL REGISTER amending the Table —

(i) Such a change does not apply to the shipment of any package filled prior to the effective date of the amendment; and

(ii) Stocks of preprinted shipping papers and package markings may be continued in use, in the manner previously authorized, until depleted or for a one-year period, subsequent to the effective date of the amendment, whichever is less.

(2) Except as otherwise provided in this section, any alteration of a shipping description or associated entry which is listed in the § 172.101 Table must receive prior written approval from the Associate Administrator.

(3) The proper shipping name of a hazardous material changed in the May 6, 1997 final rule, in effect on October 1, 1997, only by the addition or omission of the word “compressed,” “inhibited,” “liquefied” or “solution” may continue to be used to comply with package marking requirements, until January 1, 2003.

[PUBLISHER’S NOTE: The Hazardous Materials table cannot be efficiently reproduced on LEXIS. See the Publisher’s Note at the beginning of this section.]

APPENDIX A TO § 172.101 — LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

1. This Appendix lists materials and their corresponding reportable quantities (RQ’s) that are listed or designated as “hazardous substances” under section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601(14) (CERCLA; 42 U.S.C. 9601 et seq). This listing fulfills the requirement of CERCLA, 42 U.S.C. 9656(a), that all “hazardous substances,” as defined in 42 U.S.C. 9601(14), be listed and regulated as hazardous materials under 49 U.S.C. 5101-5127. That definition includes substances listed under sections 311(b)(2)(A) and 307(a) of the Federal Water Pollution Control Act, 33 U.S.C. 1321(b)(2)(A) and 1317(a), section 3001 of the Solid Waste Disposal Act, 42 U.S.C. 6921, and section 112 of the Clean Air Act, 42 U.S.C. 7412. In addition, this list contains materials that the Administrator of the Environmental Protection Agency has determined to be hazardous substances in accordance with section 102 of CERCLA, 42 U.S.C. 9602. It should be noted that 42 U.S.C. 9656(b) provides that common and contract carriers may be held liable under laws other than CERCLA for the release of a hazardous substance as defined in that Act, during transportation that commenced before the effective date of the listing and regulating of that substance as a hazardous material under 49 U.S.C. 5101-5127.

2. This Appendix is divided into two TABLES which are entitled “TABLE 1-HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES” and “TABLE 2-RADIONUCLIDES.” A material listed in this Appendix is regulated as a hazardous material and a hazardous substance under this subchapter if it meets the definition of a hazardous substance in § 171.8 of this subchapter.

3. The procedure for selecting a proper shipping name for a hazardous substance is set forth in § 172.101(c).

4. Column 1 of TABLE 1, entitled “Hazardous substance”, contains the names of those elements and compounds that are hazardous substances. Following the listing of elements and compounds is a listing of waste streams. These waste streams appear on the list in numerical sequence and are referenced by the appropriate “D”, “F”, or “K” numbers. Column 2 of TABLE 1, entitled “Reportable quantity (RQ)”, contains the reportable quantity (RQ), in pounds and kilograms, for each hazardous substance listed in Column 1 of TABLE 1.

5. A series of notes is used throughout TABLE 1 and TABLE 2 to provide additional information concerning certain hazardous substances. These notes are explained at the end of each TABLE.

6. TABLE 2 lists radionuclides that are hazardous substances and their corresponding RQ’s. The RQ’s in Table 2 for radionuclides are expressed in units of curies and terabecquerels, whereas those in Table 1 are expressed in units of pounds and kilograms. If a material is listed in both Table 1 and Table 2, the lower RQ shall apply. Radionuclides are listed in alphabetical order. The RQ’s for radionuclides are given in the radiological unit of measure of curie, abbreviated “Ci”, followed, in parentheses, by an equivalent unit measured in terabecquerels, abbreviated “TBq”.

7. For mixtures of radionuclides, the following requirements shall be used in determining if a package contains an RQ of a hazardous substance: (i) if the identity and quantity (in curies or terabecquerels) of each radionuclide in a mixture or solution is known, the ratio between the quantity per package (in curies or terabecquerels) and the RQ for the radionuclide must be determined for each radionuclide. A package contains an RQ of a hazardous substance when the sum of the ratios for the radionuclides in the mixture or solution is equal to or greater than one; (ii) if the identity of each radionuclide in a mixture or solution is known but the quantity per package (in curies or terabecquerels) of one or more of the radionuclides is unknown, an RQ of a hazardous substance is present in a package when the total quantity (in curies or terabecquerels) of the mixture or solution is equal to or greater than the lowest RQ of any individual radionuclide in the mixture or solution; and (iii) if the identity of one or more radionuclides in a mixture or solution is unknown (or if the identity of a radionuclide by itself is unknown), an RQ of a hazardous substance is present when the total quantity (in curies or terabecquerels) in a package is equal to or greater than either one curie or the lowest RQ of any known individual radionuclide in the mixture or solution, whichever is lower.

[PUBLISHER’S NOTE: Table 1 cannot be efficiently reproduced on LEXIS. See the Publisher’s Note at the beginning of this section.]

[PUBLISHER’S NOTE: Table 2 cannot be efficiently reproduced on LEXIS. See the Publisher’s Note at the beginning of this section.]

APPENDIX B TO § 172.101 — LIST OF MARINE POLLUTANTS

1. See § 171.4 of this subchapter for applicability to marine pollutants. This appendix lists potential marine pollutants as defined in § 171.8 of this subchapter.

2. Marine pollutants listed in this appendix are not necessarily listed by name in the § 172.101 Table. If a marine pollutant not listed by name or by synonym in the § 172.101 Table meets the definition of any hazard Class 1 through 8, then you must determine the class and division of the material in accordance with § 173.2a of this subchapter. You must also select the most appropriate hazardous material description and proper shipping name. If a marine pollutant not listed by name or by synonym in the § 172.101 Table does not meet the definition of any Class 1 through 8, then you must offer it for transportation under the most appropriate of the following two Class 9 entries: “Environmentally hazardous substances, liquid, n.o.s.,” UN3082, or “Environmentally hazardous substances, solid, n.o.s.” UN3077.

3. This appendix contains two columns. The first column, entitled “S.M.P.” (for severe marine pollutants), identifies whether a material is a severe marine pollutant. If the letters “PP” appear in this column for a material, the material is a severe marine pollutant, otherwise it is not. The second column, entitled “Marine Pollutant”, lists the marine pollutants.

4. If a material is not listed in this appendix and meets the criteria for a marine pollutant as provided in Chapter 2.9 of the IMDG Code, (incorporated by reference; see § 171.7 of this subchapter), the material may be transported as a marine pollutant in accordance with the applicable requirements of this subchapter.

5. If a material or a solution meeting the definition of a marine pollutant in § 171.8 of this subchapter does not meet the criteria for a marine pollutant as provided in section 2.9.3.3 and 2.9.3.4 of the IMDG Code, (incorporated by reference; see § 171.7 of this subchapter), it may be excepted from the requirements of this subchapter as a marine pollutant if that exception is approved by the Associate Administrator.

[PUBLISHER'S NOTE: The List of Marine Pollutants table cannot be efficiently reproduced on LEXIS. See the Publisher's Note at the beginning of this section.]

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 172

History

[55 FR 46798, Nov. 7, 1990; 55 FR 52474, Dec. 21, 1990, as amended by 56 FR 49987, 49988, Oct. 2, 1991; 56 FR 66162, Dec. 20, 1991; 57 FR 1878, Jan 16, 1992; 57 FR 45454-45457, Oct. 1, 1992; 57 FR 47513, Oct. 16, 1992; 57 FR 52935, Nov. 5, 1992; 57 FR 59309, 59310, Dec. 15, 1992; 58 FR 3348, Jan. 8, 1993; 58 FR 50231, Sept. 24, 1993; 58 FR 50494, Sept. 27, 1993; 58 FR 50501, Sept. 27, 1993; 58 FR 51528-51530, Oct. 1, 1993; 59 FR 28491, June 2, 1994, as corrected at 59 FR 35411, July 11, 1994, as corrected at 59 FR 37537, July 22, 1994; 59 FR 38052, July 26, 1994; 59 FR 49132, Sept. 26, 1994; 59 FR 67407-67408, 67485, Dec. 29, 1994; 60 FR 26800, 26805, May 18, 1995; 60 FR 40032, Aug. 4, 1995; 60 FR 48780, 48786, Sept. 20, 1995; 60 FR 49048, 49072, Sept. 21, 1995; 60 FR 49106, 49108-49110, Sept. 21, 1995; 60 FR 50292, 50303, Sept. 28, 1995; 61 FR 18926, 18932, April 29, 1996; 61 FR 20747, 20749, May 8, 1996; 61 FR 27166, 27172, May 30, 1996, as confirmed at 61 FR 51236, Oct. 1, 1996; 61 FR 28666, 28674, June 5, 1996, as confirmed at 61 FR 38605, 38642, July 25, 1996; 61 FR 50616, 50623, Sept. 26, 1996; 61 FR 51238, 51240, Oct. 1, 1996; 61 FR 51334, 51337, 51338, Oct. 1, 1996; 62 FR 1217, 1227, Jan. 8, 1997; 62 FR 14334, 14337, Mar. 26, 1997; 62 FR 24701, 24702, 24714, 24716, 24717, May 6, 1997, as corrected at 62 FR 45702, Aug. 28, 1997; 62 FR 30767, 30770, June 5, 1997, as corrected and amended at 62 FR 34667, 34669, June 27, 1997; 62 FR 39398, 39404, July 22, 1997; 62 FR 51554, 51558, 51560, Oct. 1, 1997; 63 FR 37454, 37459, 37461, July 10, 1998; 63 FR 52844, 52847, Oct. 1, 1998; 64 FR 10742, 10753, 10772, 10773, 10774, Mar. 5, 1999, as corrected at 64 FR 44426, 44428, 44578, 44579, Aug. 16, 1999; 64 FR 45388, 45396, Aug. 19, 1999; 64 FR 51912, 51916, 51918, Sept. 27, 1999, as corrected at 64 FR 54730, Oct. 7, 1999, and as corrected and amended at 64 FR 61219, 61220, Nov. 10, 1999; 65 FR 7310, 7311, Feb. 14, 2000; 65 FR 50450, 50457, 50458, 50459, Aug. 18, 2000; 65 FR 58614, 58620, 58626, Sept. 29, 2000, as corrected at 65 FR 60382, Oct. 11, 2000; 66 FR 33316, 33337, 33413, June 21, 2001; 66 FR 45177, 45182, Aug. 28, 2001; 66 FR 45376, 45379, Aug. 28, 2001; 67 FR 9926, 9927, Mar. 5, 2002, as corrected at 67 FR 13680, Mar. 25, 2002; 67 FR 15736, 15739, 15743, Apr. 3, 2002; 67 FR 51626, 51641, Aug. 8, 2002; 67 FR 53118, 53133, Aug. 14, 2002, as corrected at 67 FR 54967, Aug. 27, 2002 and as corrected at 67 FR 57635, Sept. 11, 2002; 67 FR 61006, 61013, Sept. 27, 2002; 68 FR 19258, 19274, Apr. 18, 2003, as corrected at 68 FR 52363, 52368, Sept. 3, 2003; 68 FR 44992, 45011, 45026, July 31, 2003; 68 FR 48562, 48567, Aug. 14, 2003; 68 FR 57629, 57632, Oct. 6, 2003; 69 FR 3632, 3665, Jan. 26, 2004, as corrected 69 FR 55113, 55116, Sept. 13, 2004; 69 FR 34604, 34608, June 22, 2004; 69 FR 41967, 41968, July 13, 2004; 69 FR 54042, 54045, Sept. 7, 2004; 69 FR 75208, 75215, Dec. 15, 2004, as confirmed and amended at 72 FR 44930, 44947, 44948, Aug. 9, 2007; 69 FR 76044, 76063, 76150, Dec. 20, 2004; 70 FR 34066, 34072, June 13, 2005; 70 FR 34381, 34388, June 14, 2005; 70 FR 56084, 56091, Sept. 23, 2005, as corrected at 70 FR 59119, Oct. 11, 2005; 71 FR 3418, 3425, Jan. 23, 2006; 71 FR 14586, 14601, Mar. 22, 2006; 71 FR 32244, 32256, June 2, 2006; 71 FR 33858, 33876, June 12, 2006; 71 FR 54388, 54391, Sept. 14, 2006; 71 FR 78596, 78612, 78626, Dec. 29, 2006; 72 FR 4442, 4455, Jan. 31, 2007; 72 FR 55091, Sept. 28, 2007;

72 FR 55678, 55684, Oct. 1, 2007, as corrected at 72 FR 59146, Oct. 18, 2007; 73 FR 1089, 1094, Jan. 7, 2008; 73 FR 4699, 4713, Jan. 28, 2008, as corrected at 73 FR 40914, July 16, 2008; 74 FR 1770, 1796, Jan. 13, 2009; 74 FR 2200, 2233-2249, Jan. 14, 2009; 74 FR 52896, 52900, Oct. 15, 2009, as confirmed at 74 FR 65696, Dec. 11, 2009; 74 FR 53182, 53186, Oct. 16, 2009; 75 FR 63, 69, Jan. 4, 2010.; 75 FR 5376, 5390, Feb. 2, 2010; 75 FR 53593, 53596, Sept. 1, 2010; 76 FR 3308, Jan. 19, 2011; 76 FR 37283, 37285, June 27, 2011; 76 FR 43510, 43525, July 20, 2011; 76 FR 56304, 56312, Sept. 13, 2011; 76 FR 82163, 82172, Dec. 30, 2011; 77 FR 60935, 60939, 60940, Oct. 5, 2012; 78 FR 988, 1033, Jan. 7, 2013, as corrected at 78 FR 8431, Feb. 6, 2013; 78 FR 14702, 14712, Mar. 7, 2013, as corrected at 78 FR 17874, Mar. 25, 2013; 78 FR 15303, 15322, Mar. 11, 2013; 78 FR 42457, 42475, July 16, 2013; 78 FR 60745, 60751, Oct. 2, 2013; 78 FR 65454, 65469, Oct. 31, 2013; 78 FR 69310, Nov. 19, 2013; 79 FR 46012, 46034, Aug. 6, 2014; 80 FR 1076, 1116, Jan. 8, 2015; 80 FR 9217, Feb. 20, 2015; 80 FR 72914, 72920, Nov. 23, 2015; 80 FR 79424, 79449, Dec. 21, 2015; 81 FR 3636, 3665, Jan. 21, 2016; 81 FR 35484, 35513, June 2, 2016; 82 FR 15796, 15838, Mar. 30, 2017; 83 FR 28162, 28166, June 18, 2018; 83 FR 52878, 52891 Oct. 18, 2018, corrected at 83 FR 54683, Oct. 31, 2018 84 FR 8006, 8027, Mar. 6, 2019; 85 FR 27810, 27853, May 11, 2020; 85 FR 44994, 45028, July 24, 2020; 85 FR 75680, 75706, Nov. 25, 2020; 85 FR 83375, Dec. 21, 2020; as corrected at 86 FR 2564, Jan. 13, 2021; 87 FR 44944, 44982, July 26, 2022; 87 FR 79752, 79766, Dec. 27, 2022, as corrected at 88 FR 4756, Jan. 25, 2023; 88 FR 60356, 60373, Sept. 1, 2023]

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End of Document

49 CFR 172.101

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

LEXISNEXIS' CODE OF FEDERAL REGULATIONS > Title 49 Transportation > Subtitle B — Other Regulations Relating to Transportation > Chapter I — Pipeline and Hazardous Materials Safety Administration, Department of Transportation > Subchapter C — Hazardous Materials Regulations > Part 172 — Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, Training Requirements, and Security Plans > Subpart B — Table of Hazardous Materials and Special Provisions

Notice

. This section has more than one version with varying effective dates.

§ 172.101 Purpose and use of hazardous materials table. [Effective October 31, 2023]

[PUBLISHER'S NOTE: Because of their size and complexity, the Hazardous Materials table in paragraph (l)(3) and the tables in Appendices A and B cannot be efficiently reproduced on LEXIS. The tables are amended frequently, and recent amendments have been subject to multiple delayed effective dates. For these reasons, these tables do not appear on LEXIS. See the version of the table in the latest edition of the CFR book and consult the List of CFR Sections Affected for subsequent amendments.]

[PUBLISHER'S NOTE: From October 2, 2012, through the present, the versions of the Hazardous Materials tables in paragraph (l)(3) and the tables in Appendices A and B, as they appear in the 2012 Government Printing Office (GPO) edition of the CFR, have been amended at the following Federal Register citations: 77 FR 60935, 60940, Oct. 5, 2012; 78 FR 988, 1033, Jan. 7, 2013, as corrected at 78 FR 8431, Feb. 6, 2013; 78 FR 14702, 14712, Mar. 7, 2013, as corrected at 78 FR 17874, Mar. 25, 2013; 78 FR 15303, 15322, Mar. 11, 2013; 78 FR 42457, 42475, July 16, 2013; 78 FR 60745, 60751, Oct. 2, 2013; 78 FR 65454, 65469, Oct. 31, 2013; 78 FR 69310, Nov. 19, 2013; 79 FR 15033, 15043, Mar. 18, 2014; 79 FR 46012, 46034, Aug. 6, 2014; 80 FR 1076, 1116, Jan. 8, 2015; 80 FR 72914, 72920, Nov. 23, 2015; 80 FR 79424, 79449, Dec. 21, 2015; 81 FR 3636, 3665, Jan. 21, 2016; 81 FR 35484, 35513, June 2, 2016; 82 FR 15796, 15838, Mar. 30, 2017; 83 FR 28162, June 18, 2018; 83 FR 52878, 52891, Oct. 18, 2018; 83 FR 54683, Oct. 31, 2018; 84 FR 8006, 8027, Mar. 6, 2019; 85 FR 27810, 27853, May 11, 2020; 85 FR 44994, 45028, July 24, 2020; 85 FR 75680, Nov. 25, 2020; 85 FR 83375, Dec. 21, 2020; 87 FR 44944, 44982, July 26, 2022; 87 FR 79752, 79766, Dec. 27, 2022, as corrected at 88 FR 4756, Jan. 25, 2023; 88 FR 60356, 60373, Sept. 1, 2023.]

(a) The Hazardous Materials Table (Table) in this section designates the materials listed therein as hazardous materials for the purpose of transportation of those materials. For each listed material, the Table identifies the hazard class or specifies that the material is forbidden in transportation, and gives the proper shipping name or directs the user to the preferred proper shipping name. In addition, the Table specifies or references requirements in this subchapter pertaining to labeling, packaging, quantity limits aboard aircraft and stowage of hazardous materials aboard vessels.

(b) Column 1: Symbols. Column 1 of the Table contains six symbols (“+”, “A”, “D”, “G”, “I” and “W” as follows:

(1) The plus (+) sign fixes the proper shipping name, hazard class and packing group for that entry without regard to whether the material meets the definition of that class, packing group or any other hazard class definition. When the plus sign is assigned to a proper shipping name in Column (1) of the § 172.101 Table, it means that the material is known to pose a risk to humans. When a plus sign is assigned to mixtures or solutions containing a material where the hazard to humans is significantly different from that of the pure material or where no hazard to humans is posed, the material may be described using an alternative shipping name that represents the hazards posed by the material. An appropriate alternate proper shipping name and hazard class may be authorized by the Associate Administrator.

(2) The letter “A” denotes a material that is subject to the requirements of this subchapter only when offered or intended for transportation by aircraft, unless the material is a hazardous substance or a hazardous waste. A shipping description entry preceded by an “A” may be used to describe a material for other modes of transportation provided all applicable requirements for the entry are met.

(3) The letter “D” identifies proper shipping names which are appropriate for describing materials for domestic transportation but may be inappropriate for international transportation under the provisions of international regulations (e.g., IMO, ICAO). An alternate proper shipping name may be selected when either domestic or international transportation is involved.

(4) The letter “G” identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description. (See § 172.203(k).)

(5) The letter “I” identifies proper shipping names which are appropriate for describing materials in international transportation. An alternate proper shipping name may be selected when only domestic transportation is involved.

(6) The letter “W” denotes a material that is subject to the requirements of this subchapter only when offered or intended for transportation by vessel, unless the material is a hazardous substance or a hazardous waste. A shipping description entry preceded by a “W” may be used to describe a material for other modes of transportation provided all applicable requirements for the entry are met.

(c) Column 2: Hazardous materials descriptions and proper shipping names. Column 2 lists the hazardous materials descriptions and proper shipping names of materials designated as hazardous materials. Modification of a proper shipping name may otherwise be required or authorized by this section. Proper shipping names are limited to those shown in Roman type (not italics).

(1) Proper shipping names may be used in the singular or plural and in either capital or lower case letters. Words may be alternatively spelled in the same manner as they appear in the ICAO Technical Instructions or the IMDG Code. For example “aluminum” may be spelled “aluminium” and “sulfur” may be spelled “sulphur”. However, the word “inflammable” may not be used in place of the word “flammable”.

(2) Punctuation marks and words in italics are not part of the proper shipping name, but may be used in addition to the proper shipping name. The word “or” in italics indicates that there is a choice of terms in the sequence that may alternately be used as the proper shipping name or as part of the proper shipping name, as appropriate. For example, for the hazardous materials description “Carbon dioxide, solid or Dry ice” either “Carbon dioxide, solid” or “Dry ice” may be used as the proper shipping name; and for the hazardous materials description “Articles, pressurized pneumatic or hydraulic,” either “Articles, pressurized pneumatic” or “Articles, pressurized hydraulic” may be used as the proper shipping name.

(3) The word “poison” or “poisonous” may be used interchangeably with the word “toxic” when only domestic transportation is involved. The abbreviation “n.o.i.” or “n.o.i.b.n.” may be used interchangeably with “n.o.s.”.

(4) Except for hazardous wastes, when qualifying words are used as part of the proper shipping name, their sequence in the package markings and shipping paper description is optional. However, the entry in the Table reflects the preferred sequence.

(5) When one entry references another entry by use of the word “see”, if both names are in Roman type, either name may be used as the proper shipping name (e.g., Ethyl alcohol, see Ethanol).

(6) When a proper shipping name includes a concentration range as part of the shipping description, the actual concentration, if it is within the range stated, may be used in place of the concentration range. For example, an aqueous solution of hydrogen peroxide containing 30 percent peroxide may be described as “Hydrogen peroxide, aqueous solution with not less than 20 percent but not more than 40 percent hydrogen peroxide” or “Hydrogen peroxide, aqueous solution with 30 percent hydrogen peroxide. ” Also, the percent sign (%) may be used in place of the word “percent” when words in italics containing the word “percent” are used in addition to the proper shipping name.

(7) Use of the prefix “mono” is optional in any shipping name, when appropriate. Thus, Iodine monochloride may be used interchangeably with Iodine chloride. In “Glycerol alpha-monochlorohydrin” the term “mono” is considered a prefix to the term “chlorohydrin” and may be deleted.

(8) Use of the word “liquid” or “solid”. The word “liquid” or “solid” may be added to a proper shipping name when a hazardous material specifically listed by name may, due to differing physical states, be a liquid or solid. When the packaging specified in Column 8 is inappropriate for the physical state of the material, the table provided in paragraph (i)(4) of this section should be used to determine the appropriate packaging section.

(9) Hazardous wastes. If the word “waste” is not included in the hazardous material description in Column 2 of the Table, the proper shipping name for a hazardous waste (as defined in § 171.8 of this subchapter), shall include the word “Waste” preceding the proper shipping name of the material. For example: Waste acetone.

(10) Mixtures and solutions

(i) A mixture or solution meeting the definition of one or more hazard class that is not identified specifically by name, comprised of a single predominant hazardous material identified in the Table by technical name and one or more hazardous and/or non-hazardous material, must be described using the proper shipping name of the hazardous material and the qualifying word “mixture” or “solution”, as appropriate, unless—

(A) Except as provided in § 172.101(i)(4) the packaging specified in Column 8 is inappropriate to the physical state of the material;

(B) The shipping description indicates that the proper shipping name applies only to the pure or technically pure hazardous material;

(C) The hazard class, packing group, or subsidiary hazard of the mixture or solution is different from that specified for the entry;

(D) There is a significant change in the measures to be taken in emergencies;

(E) The material is identified by special provision in Column 7 of the § 172.101 Table as a material poisonous by inhalation; however, it no longer meets the definition of poisonous by inhalation or it falls within a different hazard zone than that specified in the special provision; or

(F) The material can be appropriately described by a shipping name that describes its intended application, such as “Coating solution”, “Extracts, flavoring” or “Compound, cleaning liquid.”

(ii) If one or more of the conditions in paragraphs (c)(10)(i)(A) through (F) of this section is satisfied then the proper shipping name selection process in (c)(12)(ii) must be used.

(iii) A mixture or solution meeting the definition of one or more hazard class that is not identified in the Table specifically by name, comprised of two or more hazardous materials in the same hazard

class, must be described using an appropriate shipping description (e.g., “Flammable liquid, n.o.s.”). The name that most appropriately describes the material shall be used; e.g., an alcohol not listed by its technical name in the Table shall be described as “Alcohol, n.o.s.” rather than “Flammable liquid, n.o.s.”. Some mixtures may be more appropriately described according to their application, such as “Coating solution” or “Extracts, flavoring liquid” rather than by an n.o.s. entry. Under the provisions of subparts C and D of this part, the technical names of at least two components most predominately contributing to the hazards of the mixture or solution may be required in association with the proper shipping name.

(11) Except for a material subject to or prohibited by § 173.21, 173.54, 173.56(d), 173.56(e), 173.224(c) or 173.225(b) of this subchapter, a material that is considered to be a hazardous waste or a sample of a material for which the hazard class is uncertain and must be determined by testing may be assigned a tentative proper shipping name, hazard class, identification number and packing group, if applicable, based on the shipper’s tentative determination according to:

(i) Defining criteria in this subchapter;

(ii) The hazard precedence prescribed in § 173.2a of this subchapter;

(iii) The shipper’s knowledge of the material;

(iv) In addition to paragraphs (c)(11)(i) through (iii) of this section, for a sample of a material other than a waste, the following must be met:

(A) Except when the word “Sample” already appears in the proper shipping name, the word “Sample” must appear as part of the proper shipping name or in association with the basic description on the shipping paper.

(B) When the proper shipping description for a sample is assigned a “G” in Column (1) of the § 172.101 Table, and the primary constituent(s) for which the tentative classification is based are not known, the provisions requiring a technical name for the constituent(s) do not apply; and

(C) A sample must be transported in a combination packaging that conforms to the requirements of this subchapter that are applicable to the tentative packing group assigned, and may not exceed a net mass of 2.5 kg (5.5 pounds) per package.

Note to Paragraph (c)(11): For the transportation of samples of self-reactive materials, organic peroxides, explosives or lighters, See §§ 173.224(c)(3), 173.225(c)(2), 173.56(d) or 173.308(b)(2) of this subchapter, respectively.

(12) Except when the proper shipping name in the Table is preceded by a plus (+) —

(i) If it is specifically determined that a material meets the definition of a hazard class, packing group or hazard zone, other than the class, packing group or hazard zone shown in association with the proper shipping name, or does not meet the defining criteria for a subsidiary hazard shown in Column 6 of the Table, the material shall be described by an appropriate proper shipping name listed in association with the correct hazard class, packing group, hazard zone, or subsidiary hazard for the material.

(ii) Generic or n.o.s. descriptions. If an appropriate technical name is not shown in the Table, selection of a proper shipping name shall be made from the generic or n.o.s. descriptions corresponding to the specific hazard class, packing group, hazard zone, or subsidiary hazard, if any, for the material. The name that most appropriately describes the material shall be used; e.g., an alcohol not listed by its technical name in the Table shall be described as “Alcohol, n.o.s.” rather than “Flammable liquid, n.o.s.”. Some mixtures may be more appropriately described according to their application, such as “Coating solution” or “Extracts, flavoring, liquid”, rather than by an n.o.s. entry, such as “Flammable liquid, n.o.s.” It should be noted, however, that an n.o.s. description as a proper shipping name may not provide sufficient information for shipping papers and package markings. Under the provisions of subparts C and D of this part, the technical name of one or more

constituents which makes the product a hazardous material may be required in association with the proper shipping name.

(iii) Multiple hazard materials. If a material meets the definition of more than one hazard class, and is not identified in the Table specifically by name (e.g., acetyl chloride), the hazard class of the material shall be determined by using the precedence specified in § 173.2a of this subchapter, and an appropriate shipping description (e.g., “Flammable liquid, corrosive n.o.s.”) shall be selected as described in paragraph (c)(12)(ii) of this section.

(iv) If it is specifically determined that a material is not a forbidden material and does not meet the definition of any hazard class, the material is not a hazardous material.

(13) Self-reactive materials and organic peroxides. A generic proper shipping name for a self-reactive material or an organic peroxide, as listed in Column 2 of the Table, must be selected based on the material’s technical name and concentration, in accordance with the provisions of §§ 173.224 or 173.225 of this subchapter, respectively.

(14) A proper shipping name that describes all isomers of a material may be used to identify any isomer of that material if the isomer meets criteria for the same hazard class or division, subsidiary risk(s) and packing group, unless the isomer is specifically identified in the Table.

(15) Unless a hydrate is specifically listed in the Table, a proper shipping name for the equivalent anhydrous substance may be used, if the hydrate meets the same hazard class or division, subsidiary risk(s) and packing group.

(16) Unless it is already included in the proper shipping name in the § 172.101 Table, the qualifying words “liquid” or “solid” may be added in association with the proper shipping name when a hazardous material specifically listed by name in the § 172.101 Table may, due to the differing physical states of the various isomers of the material, be either a liquid or a solid (for example “Dinitrotoluenes, liquid” and “Dinitrotoluenes, solid”). Use of the words “liquid” or “solid” is subject to the limitations specified for the use of the words “mixture” or “solution” in paragraph (c)(10) of this section. The qualifying word “molten” may be added in association with the proper shipping name when a hazardous material, which is a solid in accordance with the definition in § 171.8 of this subchapter, is offered for transportation in the molten state (for example, “Alkylphenols, solid, n.o.s., molten”).

(17) Unless it is already included in the proper shipping name in the § 172.101 Table, the qualifying word ‘‘stabilized’’ may be added in association with the proper shipping name, as appropriate, where without stabilization the substance would be forbidden for transportation according to § 173.21(f) of this subchapter.

(d) Column 3: Hazard class or Division. Column 3 contains a designation of the hazard class or division corresponding to each proper shipping name, or the word “Forbidden”.

(1) A material for which the entry in this column is “Forbidden” may not be offered for transportation or transported. This prohibition does not apply if the material is diluted, stabilized or incorporated in a device and it is classed in accordance with the definitions of hazardous materials contained in part 173 of this subchapter.

(2) When a reevaluation of test data or new data indicates a need to modify the “Forbidden” designation or the hazard class or packing group specified for a material specifically identified in the Table, this data should be submitted to the Associate Administrator.

(3) A basic description of each hazard class and the section reference for class definitions appear in § 173.2 of this subchapter.

(4) Each reference to a Class 3 material is modified to read “Combustible liquid” when that material is reclassified in accordance with § 173.150(e) or (f) of this subchapter or has a flash point above 60° C (140° F) but below 93° C (200° F).

(e) Column 4: Identification number. Column 4 lists the identification number assigned to each proper shipping name. Those preceded by the letters “UN” are associated with proper shipping names considered appropriate for international transportation as well as domestic transportation. Those preceded by the letters “NA” are associated with proper shipping names not recognized for transportation outside of the United States. Identification numbers in the “NA9000” series are associated with proper shipping names not appropriately covered by international hazardous materials (dangerous goods) transportation standards, or not appropriately addressed by international transportation standards for emergency response information purposes, except for transportation in the United States. Those preceded by the letters “ID” are associated with proper shipping names recognized by the ICAO Technical Instructions (see § 171.7 of this subchapter for availability).

(f) Column 5: Packing group. Column 5 specifies one or more packing groups assigned to a material corresponding to the proper shipping name and hazard class for that material. Class 2, Class 7, and Division 6.2 do not have packing groups. Articles in classes other than Class 1 are not assigned to packing groups. For packing purposes, any requirement for a specific packaging performance level is set out in the applicable packing authorizations of part 173. Packing Groups I, II, and III indicate the degree of danger presented by the material is great, medium, or minor, respectively. If more than one packing group is indicated for an entry, the packing group for the hazardous material is determined using the criteria for assignment of packing groups specified in subpart D of part 173. When a reevaluation of test data or new data indicates a need to modify the specified packing group(s), the data should be submitted to the Associate Administrator. Each reference in this column to a material that is a hazardous waste or a hazardous substance, and whose proper shipping name preceded in Column 1 of the Table by the letter “A” or “W,” is modified to read “III” on those occasions when the material is offered for transportation or transported by a mode in which its transportation is not otherwise subject to requirements of this subchapter.

(g) Column 6: Labels. Column 6 specifies codes which represent the hazard warning labels required for a package filled with a material conforming to the associated hazard class and proper shipping name, unless the package is otherwise excepted from labeling by a provision in subpart E of this part, or part 173 of this subchapter. The first code is indicative of the primary hazard of the material. Additional label codes are indicative of subsidiary hazards. Provisions in § 172.402 may require that a label other than that specified in Column 6 be affixed to the package in addition to that specified in Column 6. No label is required for a material classed as a combustible liquid or for a Class 3 material that is reclassed as a combustible liquid. For “Empty” label requirements, see § 173.428 of this subchapter. The codes contained in Column 6 are defined according to the following table:

LABEL SUBSTITUTION TABLE

Label code	Label name
1	Explosive.
1.1 [1]	Explosive 1.1 [1]
1.2 [1]	Explosive 1.2 [1]
1.3 [1]	Explosive 1.3 [1]
1.4 [1]	Explosive 1.4 [1]

[1] Refers to the appropriate compatibility group letter.

[1] Refers to the appropriate compatibility group letter.

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§ 172.101 Purpose and use of hazardous materials table. [Effective October 31, 2023]

LABEL SUBSTITUTION TABLE

Label code	Label name
1.5 [1]	Explosive 1.5 [1]
1.6 [1]	Explosive 1.6 [1]
2.1	Flammable Gas
2.2	Non-Flammable Gas
2.3	Poison Gas
3	Flammable Liquid
4.1	Flammable Solid
4.2	Spontaneously Combustible
4.3	Dangerous When Wet
5.1	Oxidizer
5.2	Organic Peroxide
6.1 (inhalation hazard, Zone A or B).	Poison Inhalation Hazard
6.1 (other than inhalation hazard, Zone A or B) [2].	Poison
6.2	Infectious substance
7	Radioactive
8	Corrosive
9	Class 9

(h) Column 7: Special provisions. Column 7 specifies codes for special provisions applicable to hazardous materials. When Column 7 refers to a special provision for a hazardous material, the meaning and requirements of that special provision are as set forth in § 172.102 of this subpart.

(i) Column 8: Packaging authorizations. Columns 8A, 8B and 8C specify the applicable sections for exceptions, non-bulk packaging requirements and bulk packaging requirements, respectively, in part 173 of this subchapter. Columns 8A, 8B and 8C are completed in a manner which indicates that "§ 173." precedes the designated numerical entry. For example, the entry "202" in Column 8B associated with the proper shipping name "Gasoline" indicates that for this material conformance to non-bulk packaging requirements prescribed in § 173.202 of this subchapter is required. When packaging requirements are specified, they are in addition to the standard requirements for all packagings prescribed in § 173.24 of this subchapter and any other applicable requirements in subparts A and B of part 173 of this subchapter.

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[1] Refers to the appropriate compatibility group letter.

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[1] Refers to the appropriate compatibility group letter.

[2] The packing group for a material is indicated in column 5 of the table.

(1) Exceptions. Column 8A contains exceptions from some of the requirements of this subchapter. The referenced exceptions are in addition to those specified in subpart A of part 173 and elsewhere in this subchapter. A “None” in this column means no packaging exceptions are authorized, except as may be provided by special provisions in Column 7.

(2) Non-bulk packaging. Column 8B references the section in part 173 of this subchapter which prescribes packaging requirements for non-bulk packagings. A “None” in this column means non-bulk packagings are not authorized, except as may be provided by special provisions in Column 7. Each reference in this column to a material which is a hazardous waste or a hazardous substance, and whose proper shipping name is preceded in Column 1 of the Table by the letter “A” or “W”, is modified to include “§ 173.203” or “§ 173.213”, as appropriate for liquids and solids, respectively, on those occasions when the material is offered for transportation or transported by a mode in which its transportation is not otherwise subject to the requirements of this subchapter.

(3) Bulk packaging. Column (8C) specifies the section in part 173 of this subchapter that prescribes packaging requirements for bulk packagings, subject to the limitations, requirements, and additional authorizations of Columns (7) and (8B). A “None” in Column (8C) means bulk packagings are not authorized, except as may be provided by special provisions in Column (7) and in packaging authorizations Column (8B). Additional authorizations and limitations for use of UN portable tanks are set forth in Column 7. For each reference in this column to a material that is a hazardous waste or a hazardous substance, and whose proper shipping name is preceded in Column 1 of the Table by the letter “A” or “W” and that is offered for transportation or transported by a mode in which its transportation is not otherwise subject to the requirements of this subchapter:

(i) The column reference is § 173.240 or § 173.241, as appropriate.

(ii) For a solid material, the exception provided in special provision B54 is applicable.

(iii) For a Class 9 material, which meets the definition of an elevated temperature material, the column reference is § 173.247.

(4) For a hazardous material which is specifically named in the Table and whose packaging sections specify packagings not applicable to the form of the material (e.g., packaging specified is for solid material and the material is being offered for transportation in a liquid form) the following table should be used to determine the appropriate packaging section:

Packaging section reference for solid materials	**Corresponding packaging section for liquid materials**
§ 173.187	§ 173.181
§ 173.211	§ 173.201
§ 173.212	§ 173.202
§ 173.213	§ 173.203
§ 173.240	§ 173.241
§ 173.242	§ 173.243

(5) Cylinders. For cylinders, both non-bulk and bulk packaging authorizations are set forth in Column (8B). Notwithstanding a designation of “None” in Column (8C), a bulk cylinder may be used when specified through the section reference in Column (8B).

(j) Column 9: Quantity limitations. Columns 9A and 9B specify the maximum quantities that may be offered for transportation in one package by passenger-carrying aircraft or passenger-carrying rail car (Column 9A) or by cargo aircraft only (Column 9B), subject to the following:

(1) “Forbidden” means the material may not be offered for transportation or transported in the applicable mode of transport.

(2) The quantity limitation is “net” except where otherwise specified, such as for “Consumer commodity” which specifies “30 kg gross.”

(3) When articles or devices are specifically listed by name, the net quantity limitation applies to the entire article or device (less packaging and packaging materials) rather than only to its hazardous components.

(4) A package offered or intended for transportation by aircraft and which is filled with a material forbidden on passenger-carrying aircraft but permitted on cargo aircraft only, or which exceeds the maximum net quantity authorized on passenger-carrying aircraft, shall be labelled with the CARGO AIRCRAFT ONLY label specified in § 172.448 of this part.

(5) The total net quantity of hazardous material for an outer non-bulk packaging that contains more than one hazardous material may not exceed the lowest permitted maximum net quantity per package as shown in Column 9A or 9B, as appropriate. If one material is a liquid and one is a solid, the maximum net quantity must be calculated in kilograms. See § 173.24a(c)(1)(iv).

(k) Column 10: Vessel stowage requirements. Column 10A [Vessel stowage] specifies the authorized stowage locations on board cargo and passenger vessels. Column 10B [Other provisions] specifies codes for stowage and handling requirements for specific hazardous materials. Hazardous materials offered for transportation as limited quantities are allocated stowage category A and are not subject to the stowage codes assigned by column 10B. The meaning of each code in Column 10B is set forth in § 176.84 of this subchapter. Section 176.63 of this subchapter sets forth the physical requirements for each of the authorized locations listed in Column 10A. (For bulk transportation by vessel, see 46 CFR parts 30 to 40, 70, 98, 148, 151, 153 and 154.) The authorized stowage locations specified in Column 10A are defined as follows:

(1) Stowage category “A” means the material may be stowed “on deck” or “under deck” on a cargo vessel or on a passenger vessel.

(2) Stowage category “B” means—

(i) The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and

(ii) “On deck only” on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

(3) Stowage category “C” means the material must be stowed “on deck only” on a cargo vessel or on a passenger vessel.

(4) Stowage category “D” means the material must be stowed “on deck only” on a cargo vessel or on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on a passenger vessel in which the limiting number of passengers is exceeded.

(5) Stowage category “E” means the material may be stowed “on deck” or “under deck” on a cargo vessel or on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on a passenger vessel in which the limiting number of passengers is exceeded.

(6) Stowage category “01” means the material may be stowed “on deck” in closed cargo transport units or “under deck” on a cargo vessel (up to 12 passengers) or on a passenger vessel.

(7) Stowage category “02” means the material may be stowed “on deck” in closed cargo transport units or “under deck” on a cargo vessel (up to 12 passengers) or “on deck” in closed cargo transport units or “under deck” in closed cargo transport units on a passenger vessel.

(8) Stowage category “03” means the material may be stowed “on deck” in closed cargo transport units or “under deck” on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(9) Stowage category “04” means the material may be stowed “on deck” in closed cargo transport units or “under deck” in closed cargo transports on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(10) Stowage category “05” means the material may be stowed “on deck” in closed cargo transport units on a cargo vessel (up to 12 passengers) but the material is prohibited on a passenger vessel.

(*l*) Changes to the Table.

(1) Unless specifically stated otherwise in a rule document published in the FEDERAL REGISTER amending the Table —

(i) Such a change does not apply to the shipment of any package filled prior to the effective date of the amendment; and

(ii) Stocks of preprinted shipping papers and package markings may be continued in use, in the manner previously authorized, until depleted or for a one-year period, subsequent to the effective date of the amendment, whichever is less.

(2) Except as otherwise provided in this section, any alteration of a shipping description or associated entry which is listed in the § 172.101 Table must receive prior written approval from the Associate Administrator.

(3) The proper shipping name of a hazardous material changed in the May 6, 1997 final rule, in effect on October 1, 1997, only by the addition or omission of the word “compressed,” “inhibited,” “liquefied” or “solution” may continue to be used to comply with package marking requirements, until January 1, 2003.

[PUBLISHER’S NOTE: The Hazardous Materials table cannot be efficiently reproduced on LEXIS. See the Publisher’s Note at the beginning of this section.]

APPENDIX A TO § 172.101 — LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

1. This Appendix lists materials and their corresponding reportable quantities (RQ’s) that are listed or designated as “hazardous substances” under section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. 9601(14) (CERCLA; 42 U.S.C. 9601 et seq). This listing fulfills the requirement of CERCLA, 42 U.S.C. 9656(a), that all “hazardous substances,” as defined in 42 U.S.C. 9601(14), be listed and regulated as hazardous materials under 49 U.S.C. 5101-5127. That definition includes substances listed under sections 311(b)(2)(A) and 307(a) of the Federal Water Pollution Control Act, 33 U.S.C. 1321(b)(2)(A) and 1317(a), section 3001 of the Solid Waste Disposal Act, 42 U.S.C. 6921, and section 112 of the Clean Air Act, 42 U.S.C. 7412. In addition, this list contains materials that the Administrator of the Environmental Protection Agency has determined to be hazardous substances in accordance with section 102 of CERCLA, 42 U.S.C. 9602. It should be noted that 42 U.S.C. 9656(b) provides that common and contract carriers may be held liable under laws other than CERCLA for the release of a hazardous substance as defined in that Act, during transportation that commenced before the effective date of the listing and regulating of that substance as a hazardous material under 49 U.S.C. 5101-5127.

2. This Appendix is divided into two TABLES which are entitled “TABLE 1-HAZARDOUS SUBSTANCES OTHER THAN RADIONUCLIDES” and “TABLE 2-RADIONUCLIDES.” A material listed in this Appendix is regulated as a hazardous material and a hazardous substance under this subchapter if it meets the definition of a hazardous substance in § 171.8 of this subchapter.

3. The procedure for selecting a proper shipping name for a hazardous substance is set forth in § 172.101(c).

4. Column 1 of TABLE 1, entitled “Hazardous substance”, contains the names of those elements and compounds that are hazardous substances. Following the listing of elements and compounds is a listing of waste streams. These waste streams appear on the list in numerical sequence and are referenced by the appropriate “D”, “F”, or “K” numbers. Column 2 of TABLE 1, entitled “Reportable quantity (RQ)”, contains the reportable quantity (RQ), in pounds and kilograms, for each hazardous substance listed in Column 1 of TABLE 1.

5. A series of notes is used throughout TABLE 1 and TABLE 2 to provide additional information concerning certain hazardous substances. These notes are explained at the end of each TABLE.

6. TABLE 2 lists radionuclides that are hazardous substances and their corresponding RQ’s. The RQ’s in Table 2 for radionuclides are expressed in units of curies and terabecquerels, whereas those in Table 1 are expressed in units of pounds and kilograms. If a material is listed in both Table 1 and Table 2, the lower RQ shall apply. Radionuclides are listed in alphabetical order. The RQ’s for radionuclides are given in the radiological unit of measure of curie, abbreviated “Ci”, followed, in parentheses, by an equivalent unit measured in terabecquerels, abbreviated “TBq”.

7. For mixtures of radionuclides, the following requirements shall be used in determining if a package contains an RQ of a hazardous substance: (i) if the identity and quantity (in curies or terabecquerels) of each radionuclide in a mixture or solution is known, the ratio between the quantity per package (in curies or terabecquerels) and the RQ for the radionuclide must be determined for each radionuclide. A package contains an RQ of a hazardous substance when the sum of the ratios for the radionuclides in the mixture or solution is equal to or greater than one; (ii) if the identity of each radionuclide in a mixture or solution is known but the quantity per package (in curies or terabecquerels) of one or more of the radionuclides is unknown, an RQ of a hazardous substance is present in a package when the total quantity (in curies or terabecquerels) of the mixture or solution is equal to or greater than the lowest RQ of any individual radionuclide in the mixture or solution; and (iii) if the identity of one or more radionuclides in a mixture or solution is unknown (or if the identity of a radionuclide by itself is unknown), an RQ of a hazardous substance is present when the total quantity (in curies or terabecquerels) in a package is equal to or greater than either one curie or the lowest RQ of any known individual radionuclide in the mixture or solution, whichever is lower.

[PUBLISHER’S NOTE: Table 1 cannot be efficiently reproduced on LEXIS. See the Publisher’s Note at the beginning of this section.]

[PUBLISHER’S NOTE: Table 2 cannot be efficiently reproduced on LEXIS. See the Publisher’s Note at the beginning of this section.]

APPENDIX B TO § 172.101 — LIST OF MARINE POLLUTANTS

1. See § 171.4 of this subchapter for applicability to marine pollutants. This appendix lists potential marine pollutants as defined in § 171.8 of this subchapter.

2. Marine pollutants listed in this appendix are not necessarily listed by name in the § 172.101 Table. If a marine pollutant not listed by name or by synonym in the § 172.101 Table meets the definition of any hazard Class 1 through 8, then you must determine the class and division of the material in accordance with § 173.2a of this subchapter. You must also select the most appropriate hazardous material description and proper shipping name. If a marine pollutant not listed by name or by synonym in the § 172.101 Table does not meet the definition of any Class 1 through 8, then you must offer it for transportation under the most appropriate of the following two Class 9 entries: “Environmentally hazardous substances, liquid, n.o.s.,” UN3082, or “Environmentally hazardous substances, solid, n.o.s.” UN3077.

3. This appendix contains two columns. The first column, entitled “S.M.P.” (for severe marine pollutants), identifies whether a material is a severe marine pollutant. If the letters “PP” appear in this column for a material, the material is a severe marine pollutant, otherwise it is not. The second column, entitled “Marine Pollutant”, lists the marine pollutants.

4. If a material is not listed in this appendix and meets the criteria for a marine pollutant as provided in Chapter 2.9 of the IMDG Code, (incorporated by reference; see § 171.7 of this subchapter), the material may be transported as a marine pollutant in accordance with the applicable requirements of this subchapter.

5. If a material or a solution meeting the definition of a marine pollutant in § 171.8 of this subchapter does not meet the criteria for a marine pollutant as provided in section 2.9.3.3 and 2.9.3.4 of the IMDG Code, (incorporated by reference; see § 171.7 of this subchapter), it may be excepted from the requirements of this subchapter as a marine pollutant if that exception is approved by the Associate Administrator.

[PUBLISHER'S NOTE: The List of Marine Pollutants table cannot be efficiently reproduced on LEXIS. See the Publisher's Note at the beginning of this section.]

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 172

History

[55 FR 46798, Nov. 7, 1990; 55 FR 52474, Dec. 21, 1990, as amended by 56 FR 49987, 49988, Oct. 2, 1991; 56 FR 66162, Dec. 20, 1991; 57 FR 1878, Jan 16, 1992; 57 FR 45454-45457, Oct. 1, 1992; 57 FR 47513, Oct. 16, 1992; 57 FR 52935, Nov. 5, 1992; 57 FR 59309, 59310, Dec. 15, 1992; 58 FR 3348, Jan. 8, 1993; 58 FR 50231, Sept. 24, 1993; 58 FR 50494, Sept. 27, 1993; 58 FR 50501, Sept. 27, 1993; 58 FR 51528-51530, Oct. 1, 1993; 59 FR 28491, June 2, 1994, as corrected at 59 FR 35411, July 11, 1994, as corrected at 59 FR 37537, July 22, 1994; 59 FR 38052, July 26, 1994; 59 FR 49132, Sept. 26, 1994; 59 FR 67407-67408, 67485, Dec. 29, 1994; 60 FR 26800, 26805, May 18, 1995; 60 FR 40032, Aug. 4, 1995; 60 FR 48780, 48786, Sept. 20, 1995; 60 FR 49048, 49072, Sept. 21, 1995; 60 FR 49106, 49108-49110, Sept. 21, 1995; 60 FR 50292, 50303, Sept. 28, 1995; 61 FR 18926, 18932, April 29, 1996; 61 FR 20747, 20749, May 8, 1996; 61 FR 27166, 27172, May 30, 1996, as confirmed at 61 FR 51236, Oct. 1, 1996; 61 FR 28666, 28674, June 5, 1996, as confirmed at 61 FR 38605, 38642, July 25, 1996; 61 FR 50616, 50623, Sept. 26, 1996; 61 FR 51238, 51240, Oct. 1, 1996; 61 FR 51334, 51337, 51338, Oct. 1, 1996; 62 FR 1217, 1227, Jan. 8, 1997; 62 FR 14334, 14337, Mar. 26, 1997; 62 FR 24701, 24702, 24714, 24716, 24717, May 6, 1997, as corrected at 62 FR 45702, Aug. 28, 1997; 62 FR 30767, 30770, June 5, 1997, as corrected and amended at 62 FR 34667, 34669, June 27, 1997; 62 FR 39398, 39404, July 22, 1997; 62 FR 51554, 51558, 51560, Oct. 1, 1997; 63 FR 37454, 37459, 37461, July 10, 1998; 63 FR 52844, 52847, Oct. 1, 1998; 64 FR 10742, 10753, 10772, 10773, 10774, Mar. 5, 1999, as corrected at 64 FR 44426, 44428, 44578, 44579, Aug. 16, 1999; 64 FR 45388, 45396, Aug. 19, 1999; 64 FR 51912, 51916, 51918, Sept. 27, 1999, as corrected at 64 FR 54730, Oct. 7, 1999, and as corrected and amended at 64 FR 61219, 61220, Nov. 10, 1999; 65 FR 7310, 7311, Feb. 14, 2000; 65 FR 50450, 50457, 50458, 50459, Aug. 18, 2000; 65 FR 58614, 58620, 58626, Sept. 29, 2000, as corrected at 65 FR 60382, Oct. 11, 2000; 66 FR 33316, 33337, 33413, June 21, 2001; 66 FR 45177, 45182, Aug. 28, 2001; 66 FR 45376, 45379, Aug. 28, 2001; 67 FR 9926, 9927, Mar. 5, 2002, as corrected at 67 FR 13680, Mar. 25, 2002; 67 FR 15736, 15739, 15743, Apr. 3, 2002; 67 FR 51626, 51641, Aug. 8, 2002; 67 FR 53118, 53133, Aug. 14, 2002, as corrected at 67 FR 54967, Aug. 27, 2002 and as corrected at 67 FR 57635, Sept. 11, 2002; 67 FR 61006, 61013, Sept. 27, 2002; 68 FR 19258, 19274, Apr. 18, 2003, as corrected at 68 FR 52363, 52368, Sept. 3, 2003; 68 FR 44992, 45011, 45026, July 31, 2003; 68 FR 48562, 48567, Aug. 14, 2003; 68 FR 57629, 57632, Oct. 6, 2003; 69 FR 3632, 3665, Jan. 26, 2004, as corrected 69 FR 55113, 55116, Sept. 13, 2004; 69 FR 34604, 34608, June 22, 2004; 69 FR 41967, 41968, July 13, 2004; 69 FR 54042, 54045, Sept. 7, 2004; 69 FR 75208, 75215, Dec. 15, 2004, as confirmed and amended at 72 FR 44930, 44947, 44948, Aug. 9, 2007; 69 FR 76044, 76063, 76150, Dec. 20, 2004; 70 FR 34066, 34072, June 13, 2005; 70 FR 34381, 34388, June 14, 2005; 70 FR 56084, 56091, Sept. 23, 2005, as corrected at 70 FR 59119, Oct. 11, 2005; 71 FR 3418, 3425, Jan. 23, 2006; 71 FR 14586, 14601, Mar. 22, 2006; 71 FR 32244, 32256, June 2, 2006; 71 FR 33858, 33876, June 12, 2006; 71 FR 54388, 54391, Sept. 14, 2006; 71 FR 78596, 78612, 78626, Dec. 29, 2006; 72 FR 4442, 4455, Jan. 31, 2007; 72 FR 55091, Sept. 28, 2007;

72 FR 55678, 55684, Oct. 1, 2007, as corrected at 72 FR 59146, Oct. 18, 2007; 73 FR 1089, 1094, Jan. 7, 2008; 73 FR 4699, 4713, Jan. 28, 2008, as corrected at 73 FR 40914, July 16, 2008; 74 FR 1770, 1796, Jan. 13, 2009; 74 FR 2200, 2233-2249, Jan. 14, 2009; 74 FR 52896, 52900, Oct. 15, 2009, as confirmed at 74 FR 65696, Dec. 11, 2009; 74 FR 53182, 53186, Oct. 16, 2009; 75 FR 63, 69, Jan. 4, 2010.; 75 FR 5376, 5390, Feb. 2, 2010; 75 FR 53593, 53596, Sept. 1, 2010; 76 FR 3308, Jan. 19, 2011; 76 FR 37283, 37285, June 27, 2011; 76 FR 43510, 43525, July 20, 2011; 76 FR 56304, 56312, Sept. 13, 2011; 76 FR 82163, 82172, Dec. 30, 2011; 77 FR 60935, 60939, 60940, Oct. 5, 2012; 78 FR 988, 1033, Jan. 7, 2013, as corrected at 78 FR 8431, Feb. 6, 2013; 78 FR 14702, 14712, Mar. 7, 2013, as corrected at 78 FR 17874, Mar. 25, 2013; 78 FR 15303, 15322, Mar. 11, 2013; 78 FR 42457, 42475, July 16, 2013; 78 FR 60745, 60751, Oct. 2, 2013; 78 FR 65454, 65469, Oct. 31, 2013; 78 FR 69310, Nov. 19, 2013; 79 FR 46012, 46034, Aug. 6, 2014; 80 FR 1076, 1116, Jan. 8, 2015; 80 FR 9217, Feb. 20, 2015; 80 FR 72914, 72920, Nov. 23, 2015; 80 FR 79424, 79449, Dec. 21, 2015; 81 FR 3636, 3665, Jan. 21, 2016; 81 FR 35484, 35513, June 2, 2016; 82 FR 15796, 15838, Mar. 30, 2017; 83 FR 28162, 28166, June 18, 2018; 83 FR 52878, 52891 Oct. 18, 2018, corrected at 83 FR 54683, Oct. 31, 2018 84 FR 8006, 8027, Mar. 6, 2019; 85 FR 27810, 27853, May 11, 2020; 85 FR 44994, 45028, July 24, 2020; 85 FR 75680, 75706, Nov. 25, 2020; 85 FR 83375, Dec. 21, 2020; as corrected at 86 FR 2564, Jan. 13, 2021; 87 FR 44944, 44982, July 26, 2022; 87 FR 79752, 79766, Dec. 27, 2022, as corrected at 88 FR 4756, Jan. 25, 2023; 88 FR 60356, 60373, Sept. 1, 2023]

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End of Document

49 CFR 172.102

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

Notice

. This section has more than one version with varying effective dates.

§ 172.102 Special provisions. [Effective until October 31, 2023]

[PUBLISHER'S NOTE: As printed in the GPO edition of the CFR, some of the tables in this section are too wide to fit on an 80-character screen. Therefore, such tables have been formatted for the screen.]

(a) General. When Column 7 of the § 172.101 Table refers to a special provision for a hazardous material, the meaning and requirements of that provision are as set forth in this section. When a special provision specifies packaging or packaging requirements —

(1) The special provision is in addition to the standard requirements for all packagings prescribed in § 173.24 of this subchapter and any other applicable packaging requirements in subparts A and B of part 173 of this subchapter; and

(2) To the extent a special provision imposes limitations or additional requirements on the packaging provisions set forth in Column 8 of the § 172.101 Table, packagings must conform to the requirements of the special provision.

(b) Description of codes for special provisions. Special provisions contain packaging provisions, prohibitions, exceptions from requirements for particular quantities or forms of materials and requirements or prohibitions applicable to specific modes of transportation, as follows:

(1) A code consisting only of numbers (for example, "11") is multi-modal in application and may apply to bulk and non-bulk packagings.

(2) A code containing the letter "A" refers to a special provision which applies only to transportation by aircraft.

(3) A code containing the letter "B" refers to a special provision that applies only to bulk packaging requirements. Unless otherwise provided in this subchapter, these special provisions do not apply to UN, IM Specification portable tanks or IBCs.

(4) A code containing the letters "IB" or "IP" refers to a special provision that applies only to transportation in IBCs.

(5) A code containing the letter “N” refers to a special provision which applies only to non-bulk packaging requirements.

(6) A code containing the letter “R” refers to a special provision which applies only to transportation by rail.

(7) A code containing the letter “T” refers to a special provision which applies only to transportation in UN or IM Specification portable tanks.

(8) A code containing the letters “TP” refers to a portable tank special provision for UN or IM Specification portable tanks that is in addition to those provided by the portable tank instructions or the requirements in part 178 of this subchapter.

(9) A code containing the letter “W” refers to a special provision that applies only to transportation by water.

(c) Tables of special provisions. The following tables list, and set forth the requirements of, the special provisions referred to in Column 7 of the § 172.101 Table.

(1) Numeric provisions. These provisions are multi-modal and apply to bulk and non-bulk packagings:

Code/Special Provisions

1 This material is poisonous by inhalation (see § 171.8 of this subchapter) in Hazard Zone A (see § 173.116(a) or § 173.133(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.

2 This material is poisonous by inhalation (see § 171.8 of this subchapter) in Hazard Zone B (see § 173.116(a) or § 173.133(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.

3 This material is poisonous by inhalation (see § 171.8 of this subchapter) in Hazard Zone C (see § 173.116(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.

4 This material is poisonous by inhalation (see § 171.8 of this subchapter) in Hazard Zone D (see § 173.116(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.

5 If this material meets the definition for a material poisonous by inhalation (see § 171.8 of this subchapter), a shipping name must be selected which identifies the inhalation hazard, in Division 2.3 or Division 6.1, as appropriate.

6 This material is poisonous-by-inhalation and must be described as an inhalation hazard under the provisions of this subchapter.

8 A hazardous substance that is not a hazardous waste may be shipped under the shipping description “Other regulated substances, liquid or solid, n.o.s.”, as appropriate. In addition, for solid materials, special provision B54 applies.

9 Packaging for certain PCBs for disposal and storage is prescribed by EPA in 40 CFR 761.60 and 761.65.

11 The hazardous material must be packaged as either a liquid or a solid, as appropriate, depending on its physical form at 55°C (131°F) at atmospheric pressure.

12 In concentrations greater than 40 percent, this material has strong oxidizing properties and is capable of starting fires in contact with combustible materials. If appropriate, a package containing this material must conform to the additional labeling requirements of § 172.402 of this subchapter.

13 The words “Inhalation Hazard” shall be entered on each shipping paper in association with the shipping description, shall be marked on each non-bulk package in association with the proper

shipping name and identification number, and shall be marked on two opposing sides of each bulk package. Size of marking on bulk package must conform to § 172.302(b) of this subchapter. The requirements of §§ 172.203(m) and 172.505 of this subchapter do not apply.

14 Motor fuel antiknock mixtures are:

a. Mixtures of one or more organic lead mixtures (such as tetraethyl lead, triethylmethyl lead, diethyldimethyl lead, ethyltrimethyl lead, and tetramethyl lead) with one or more halogen compounds (such as ethylene dibromide and ethylene dichloride), hydrocarbon solvents or other equally efficient stabilizers; or

b. tetraethyl lead.

15 This entry applies to “Chemical kits” and “First aid kits” containing one or more compatible items of hazardous materials in boxes, cases, etc. that, for example, are used for medical, analytical, diagnostic, testing, or repair purposes. Kits that are carried on board transport vehicles for first aid or operating purposes are not subject to the requirements of this subchapter.

16 This description applies to smokeless powder and other solid propellants that are used as powder for small arms and have been classed as Division 1.3C, 1.4C and Division 4.1 in accordance with § 173.56 of this subchapter.

19 For domestic transportation only, the identification number “UN1075" may be used in place of the identification number specified in Column (4) of the § 172.101 Table. The identification number used must be consistent on package markings, shipping papers and emergency response information.

21 This material must be stabilized by appropriate means (e.g., addition of chemical inhibitor, purging to remove oxygen) to prevent dangerous polymerization (see § 173.21(f) of this subchapter).

22 If the hazardous material is in dispersion in organic liquid, the organic liquid must have a flash point above 50°C (122°F).

23 This material may be transported under the provisions of Division 4.1 only if it is so packed that the percentage of diluent will not fall below that stated in the shipping description at any time during transport. Quantities of not more than 500 g per package with not less than 10 percent water by mass may also be classed in Division 4.1, provided a negative test result is obtained when tested in accordance with test series 6(c) of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

24 Alcoholic beverages containing more than 70 percent alcohol by volume must be transported as materials in Packing Group II. Alcoholic beverages containing more than 24 percent but not more than 70 percent alcohol by volume must be transported as materials in Packing Group III.

26 This entry does not include ammonium permanganate, the transport of which is prohibited except when approved by the Associate Administrator.

28 The dihydrated sodium salt of dichloroisocyanuric acid does not meet the criteria for inclusion in Division 5.1 (Oxidizer) and is not subject to the requirements of this subchapter unless meeting the criteria for inclusion in another class or division.

30 Sulfur is not subject to the requirements of this subchapter if transported in a non-bulk packaging or if formed to a specific shape (for example, prills, granules, pellets, pastilles, or flakes). A bulk packaging containing sulfur is not subject to the placarding requirements of subpart F of this part, if it is marked with the appropriate identification number as required by subpart D of this part. Molten sulfur must be marked as required by § 172.325 of this subchapter.

31 Materials which have undergone sufficient heat treatment to render them non-hazardous are not subject to the requirements of this subchapter.

32 Polymeric beads and molding compounds may be made from polystyrene, poly(methyl methacrylate) or other polymeric material.

33 Ammonium nitrites and mixtures of an inorganic nitrite with an ammonium salt are prohibited.

34 The commercial grade of calcium nitrate fertilizer, when consisting mainly of a double salt (calcium nitrate and ammonium nitrate) containing not more than 10 percent ammonium nitrate and at least 12 percent water of crystallization, is not subject to the requirements of this subchapter.

35 Antimony sulphides and oxides which do not contain more than 0.5 percent of arsenic calculated on the total mass do not meet the definition of Division 6.1.

37 Unless it can be demonstrated by testing that the sensitivity of the substance in its frozen state is no greater than in its liquid state, the substance must remain liquid during normal transport conditions. It must not freeze at temperatures above -15°C (5°F).

38 If this material shows a violent effect in laboratory tests involving heating under confinement, the labeling requirements of Special Provision 53 apply, and the material must be packaged in accordance with packing method OP6 in § 173.225 of this subchapter. If the SADT of the technically pure substance is higher than 75°C, the technically pure substance and formulations derived from it are not self-reactive materials and, if not meeting any other hazard class, are not subject to the requirements of this subchapter.

39 This substance may be carried under provisions other than those of Class 1 only if it is so packed that the percentage of water will not fall below that stated at any time during transport. When phlegmatized with water and inorganic inert material, the content of urea nitrate must not exceed 75 percent by mass and the mixture should not be capable of being detonated by test 1(a)(i) or test 1(a)(ii) in the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

40 Polyester resin kits consist of two components: A base material (either Class 3 or Division 4.1, Packing Group II or III) and an activator (organic peroxide), each separately packed in an inner packaging. The organic peroxide must be type D, E, or F, not requiring temperature control. The components may be placed in the same outer packaging provided they will not interact dangerously in the event of leakage. The Packing Group assigned will be II or III, according to the classification criteria for either Class 3 or Division 4.1, as appropriate, applied to the base material. Additionally, unless otherwise excepted in this subchapter, polyester resin kits must be packaged in specification combination packagings based on the performance level of the base material contained within the kit.

41 This material at the Packing Group II hazard criteria level may be transported in Large Packagings.

43 The membrane filters, including paper separators and coating or backing materials, that are present in transport, must not be able to propagate a detonation as tested by one of the tests described in the UN Manual of Tests and Criteria, Part I, Test series 1(a) (IBR, see § 171.7 of this subchapter). On the basis of the results of suitable burning rate tests, and taking into account the standard tests in the UN Manual of Tests and Criteria, Part III, subsection 33.2.1 (IBR, see § 171.7 of this subchapter), nitrocellulose membrane filters in the form in which they are to be transported that do not meet the criteria for a Division 4.1 material are not subject to the requirements of this subchapter. Packagings must be so constructed that explosion is not possible by reason of increased internal pressure. Nitrocellulose membrane filters covered by this entry, each with a mass not exceeding 0.5 g, are not subject to the requirements of this subchapter when contained individually in an article or a sealed packet.

44 The formulation must be prepared so that it remains homogenous and does not separate during transport. Formulations with low nitrocellulose contents and neither showing dangerous properties when tested for their ability to detonate, deflagrate or explode when heated under defined confinement by the appropriate test methods and criteria in the UN Manual of Tests and Criteria

(IBR, see § 171.7 of this subchapter), nor classed as a Division 4.1 (flammable solid) when tested in accordance with the procedures specified in § 173.124 of this subchapter (chips, if necessary, crushed and sieved to a particle size of less than 1.25 mm), are not subject to the requirements of this subchapter.

45 Temperature should be maintained between 18°C (64.4°F) and 40°C (104°F). Tanks containing solidified methacrylic acid must not be reheated during transport.

46 This material must be packed in accordance with packing method OP6 (see § 173.225 of this subchapter). During transport, it must be protected from direct sunshine and stored (or kept) in a cool and well-ventilated place, away from all sources of heat.

47 Mixtures of solids that are not subject to this subchapter and flammable liquids may be transported under this entry without first applying the classification criteria of Division 4.1, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Except when the liquids are fully absorbed in solid material contained in sealed bags, for single packagings, each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level. Sealed packets and articles containing less than 10 mL of a Class 3 liquid in Packing Group II or III absorbed onto a solid material are not subject to this subchapter provided there is no free liquid in the packet or article.

48 Mixtures of solids that are not subject to this subchapter and toxic liquids may be transported under this entry without first applying the classification criteria of Division 6.1, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. For single packagings, each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level. This entry may not be used for solids containing a Packing Group I liquid.

49 Mixtures of solids that are not subject to this subchapter and corrosive liquids may be transported under this entry without first applying the classification criteria of Class 8, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. For single packagings, each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level.

50 Cases, cartridge, empty with primer which are made of metallic or plastic casings and meeting the classification criteria of Division 1.4 are not regulated for domestic transportation.

51 This description applies to items previously described as “Toy propellant devices, Class C” and includes reloadable kits. Model rocket motors containing 30 grams or less propellant are classed as Division 1.4S and items containing more than 30 grams of propellant but not more than 62.5 grams of propellant are classed as Division 1.4C.

52 This entry may only be used for substances that are too insensitive for acceptance into Class 1 (explosive) when tested in accordance with Test Series 2 in the UN Manual of Tests and Criteria, Part I (incorporated by reference; see § 171.7 of this subchapter).

53 Packages of these materials must bear the subsidiary risk label, “EXPLOSIVE”, and the subsidiary hazard class/division must be entered in parentheses immediately following the primary hazard class in the shipping description, unless otherwise provided in this subchapter or through an approval issued by the Associate Administrator, or the competent authority of the country of origin. A copy of the approval shall accompany the shipping papers.

54 Maneb or maneb preparations not meeting the definition of Division 4.3 or any other hazard class are not subject to the requirements of this subchapter when transported by motor vehicle, rail car, or aircraft.

55 This device must be approved in accordance with § 173.56 of this subchapter by the Associate Administrator.

56 A means to interrupt and prevent detonation of the detonator from initiating the detonating cord must be installed between each electric detonator and the detonating cord ends of the jet perforating guns before the charged jet perforating guns are offered for transportation.

57 Maneb or Maneb preparations stabilized against self-heating need not be classified in Division 4.2 when it can be demonstrated by testing that a volume of 1 m<3> of substance does not self-ignite and that the temperature at the center of the sample does not exceed 200°C, when the sample is maintained at a temperature of not less than 75° C [+/-] 2°C for a period of 24 hours, in accordance with procedures set forth for testing self-heating materials in the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

58 Aqueous solutions of Division 5.1 inorganic solid nitrate substances are considered as not meeting the criteria of Division 5.1 if the concentration of the substances in solution at the minimum temperature encountered in transport is not greater than 80% of the saturation limit.

59 Ferrocerium, stabilized against corrosion, with a minimum iron content of 10 percent is not subject to the requirements of this subchapter.

61 A chemical oxygen generator is spent if its means of ignition and all or a part of its chemical contents have been expended.

62 Oxygen generators (see § 171.8 of this subchapter) are not authorized for transportation under this entry.

64 The group of alkali metals includes lithium, sodium, potassium, rubidium, and caesium.

65 The group of alkaline earth metals includes magnesium, calcium, strontium, and barium.

66 Formulations of these substances containing not less than 30 percent non-volatile, non-flammable phlegmatizer are not subject to this subchapter.

70 Black powder that has been classed in accordance with the requirements of § 173.56 of this subchapter may be reclassed and offered for domestic transportation as a Division 4.1 material if it is offered for transportation and transported in accordance with the limitations and packaging requirements of § 173.170 of this subchapter.

74 During transport, this material must be protected from direct sunshine and stored or kept in a cool and well-ventilated place, away from all sources of heat.

78 This entry may not be used to describe compressed air which contains more than 23.5 percent oxygen. Compressed air containing greater than 23.5 percent oxygen must be shipped using the description “Compressed gas, oxidizing, n.o.s., UN3156.”

79 This entry may not be used for mixtures that meet the definition for oxidizing gas.

81 Polychlorinated biphenyl items, as defined in 40 CFR 761.3, for which specification packagings are impractical, may be packaged in non-specification packagings meeting the general packaging requirements of subparts A and B of part 173 of this subchapter. Alternatively, the item itself may be used as a packaging if it meets the general packaging requirements of subparts A and B of part 173 of this subchapter.

101 The name of the particular substance or article must be specified.

102 The ends of the detonating cord must be tied fast so that the explosive cannot escape. The articles may be transported as in Division 1.4 Compatibility Group D (1.4D) if all of the conditions specified in § 173.63(a) of this subchapter are met.

105 The word “Agents” may be used instead of “Explosives” when approved by the Associate Administrator.

106 The recognized name of the particular explosive may be specified in addition to the type.

107 The classification of the substance is expected to vary especially with the particle size and packaging but the border lines have not been experimentally determined; appropriate classifications should be verified following the test procedures in §§ 173.57 and 173.58 of this subchapter.

108 Fireworks must be so constructed and packaged that loose pyrotechnic composition will not be present in packages during transportation.

109 Rocket motors must be nonpropulsive in transportation unless approved in accordance with § 173.56 of this subchapter. A rocket motor to be considered “nonpropulsive” must be capable of unrestrained burning and must not appreciably move in any direction when ignited by any means.

110 Fire extinguishers transported under UN1044 and oxygen cylinders transported for emergency use under UN1072 may include installed actuating cartridges (cartridges, power device of Division 1.4C or 1.4S), without changing the classification of Division 2.2, provided the aggregate quantity of deflagrating (propellant) explosives does not exceed 3.2 grams per cylinder. Oxygen cylinders with installed actuating cartridges as prepared for transportation must have an effective means of preventing inadvertent activation.

111 Explosive substances of Division 1.1 Compatibility Group A (1.1A) are forbidden for transportation if dry or not desensitized, unless incorporated in a device.

113 The sample must be given a tentative approval by an agency or laboratory in accordance with § 173.56 of this subchapter.

114 Jet perforating guns, charged, oil well, without detonator may be reclassed to Division 1.4 Compatibility Group D (1.4D) if the following conditions are met:

a. The total weight of the explosive contents of the shaped charges assembled in the guns does not exceed 90.5 kg (200 pounds) per vehicle; and

b. The guns are packaged in accordance with Packing Method US1 as specified in § 173.62 of this subchapter.

115 Boosters with detonator, detonator assemblies and boosters with detonators in which the total explosive charge per unit does not exceed 25 g, and which will not mass detonate and undergo only limited propagation in the shipping package may be assigned to 1.4B classification code. Mass detonate means more than 90 percent of the devices tested in a package explode practically simultaneously. Limited propagation means that if one booster near the center of the package is exploded, the aggregate weight of explosives, excluding ignition and delay charges, in this and all additional boosters in the outside packaging that explode may not exceed 25 g.

116 Fuzes, detonating may be classed in Division 1.4 if the fuzes do not contain more than 25 g of explosive per fuze and are made and packaged so that they will not cause functioning of other fuzes, explosives or other explosive devices if one of the fuzes detonates in a shipping packaging or in adjacent packages.

117 If shipment of the explosive substance is to take place at a time that freezing weather is anticipated, the water contained in the explosive substance must be mixed with denatured alcohol so that freezing will not occur.

118 This substance may not be transported under the provisions of Division 4.1 unless specifically authorized by the Associate Administrator (see UN0143 or UN0150 as appropriate).

119 This substance, when in quantities of not more than 11.5 kg (25.3 pounds), with not less than 10 percent water, by mass, also may be classed as Division 4.1, provided a negative test result is obtained when tested in accordance with test series 6(c) of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

120 The phlegmatized substance must be significantly less sensitive than dry PETN.

121 This substance, when containing less alcohol, water or phlegmatizer than specified, may not be transported unless approved by the Associate Administrator.

123 Any explosives, blasting, type C containing chlorates must be segregated from explosives containing ammonium nitrate or other ammonium salts.

125 Lactose or glucose or similar materials may be used as a phlegmatizer provided that the substance contains not less than 90%, by mass, of phlegmatizer. These mixtures may be classified in Division 4.1 when tested in accordance with test series 6(c) of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter) and approved by the Associate Administrator. Testing must be conducted on at least three packages as prepared for transport. Mixtures containing at least 98%, by mass, of phlegmatizer are not subject to the requirements of this subchapter. Packages containing mixtures with not less than 90% by mass, of phlegmatizer need not bear a POISON subsidiary risk label.

127 Mixtures containing oxidizing and organic materials transported under this entry may not meet the definition and criteria of a Class 1 material. (See § 173.50 of this subchapter.)

128 Regardless of the provisions of § 172.101(c)(12), aluminum smelting by-products and aluminum remelting by-products described under this entry, meeting the definition of Class 8, Packing Group II and III may be classed as a Division 4.3 material and transported under this entry. The presence of a Class 8 hazard must be communicated as required by this Part for subsidiary hazards.

129 These materials may not be classified and transported unless authorized by the Associate Administrator on the basis of results from Series 2 Test and a Series 6(c) Test from the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter) on packages as prepared for transport. The packing group assignment and packaging must be approved by the Associate Administrator on the basis of the criteria in § 173.21 of this subchapter and the package type used for the Series 6(c) test.

130 “Batteries, dry, sealed, n.o.s.,” commonly referred to as dry batteries, are hermetically sealed and generally utilize metals (other than lead) and/or carbon as electrodes. These batteries are typically used for portable power applications. The rechargeable (and some non-rechargeable) types have gelled alkaline electrolytes (rather than acidic) making it difficult for them to generate hydrogen or oxygen when overcharged and therefore, differentiating them from non-spillable batteries. Dry batteries specifically covered by another entry in the § 172.101 Table must be transported in accordance with the requirements applicable to that entry. For example, nickel-metal hydride batteries transported by vessel in certain quantities are covered by another entry (See Batteries, nickel-metal hydride, UN3496). Dry batteries not specifically covered by another entry in the § 172.101 Table are covered by this entry (i.e., Batteries, dry, sealed, n.o.s.) and are not subject to requirements of this subchapter except for the following:

(a) Incident reporting. For transportation by aircraft, a telephone report in accordance with § 171.15(a) is required if a fire, violent rupture, explosion or dangerous evolution of heat (i.e., an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a dry battery. For all modes of transportation, a written report submitted, retained, and updated in accordance with § 171.16 is required if a fire, violent rupture, explosion or dangerous evolution of heat occurs as a direct result of a dry battery or battery-powered device.

(b) Preparation for transport. Batteries and battery-powered device(s) containing batteries must be prepared and packaged for transport in a manner to prevent:

(1) A dangerous evolution of heat;

(2) Short circuits, including but not limited to the following methods:

(i) Packaging each battery or each battery-powered device when practicable, in fully enclosed inner packagings made of non-conductive material;

(ii) Separating or packaging batteries in a manner to prevent contact with other batteries, devices or conductive materials (e.g., metal) in the packagings; or

(iii) Ensuring exposed terminals or connectors are protected with non-conductive caps, non-conductive tape, or by other appropriate means; and

(3) Damage to terminals. If not impact resistant, the outer packaging should not be used as the sole means of protecting the battery terminals from damage or short circuiting. Batteries must be securely cushioned and packed to prevent shifting which could loosen terminal caps or reorient the terminals to produce short circuits. Batteries contained in devices must be securely installed. Terminal protection methods include but are not limited to the following:

(i) Securely attaching covers of sufficient strength to protect the terminals;

(ii) Packaging the battery in a rigid plastic packaging; or

(iii) Constructing the battery with terminals that are recessed or otherwise protected so that the terminals will not be subjected to damage if the package is dropped.

(c) Additional air transport requirements. For a battery whose voltage (electrical potential) exceeds 9 volts—

(1) When contained in a device, the device must be packaged in a manner that prevents unintentional activation or must have an independent means of preventing unintentional activation (e.g., packaging restricts access to activation switch, switch caps or locks, recessed switches, trigger locks, temperature sensitive circuit breakers, etc.); and

(2) An indication of compliance with this special provision must be provided by marking each package with the words “not restricted” or by including the words “not restricted” on a transport document such as an air waybill accompanying the shipment.

(d) Used or spent battery exception. Used or spent dry batteries of both non-rechargeable and rechargeable designs, with a marked rating up to 9-volt that are combined in the same package and transported by highway or rail for recycling, reconditioning, or disposal are not subject to this special provision or any other requirement of the HMR. Note that batteries utilizing different chemistries (i.e., those battery chemistries specifically covered by another entry in the § 172.101 Table) as well as dry batteries with a marked rating greater than 9-volt may not be combined with used or spent batteries in the same package. Note also that this exception does not apply to batteries that have been reconditioned for reuse.

131 This material may not be offered for transportation unless approved by the Associate Administrator.

132 This description may only be used for ammonium nitrate-based compound fertilizers. They must be classified in accordance with the procedure as set out in the Manual of Tests and Criteria, part III, section 39 (IBR, see § 171.7 of this subchapter). Fertilizers meeting the criteria for this identification number are only subject to the requirements of this subchapter when offered for transportation and transported by air or vessel.

134 This entry applies only to vehicles powered by wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, and equipment powered by wet batteries or sodium batteries that are transported with these batteries installed. Lithium batteries installed in a cargo transport unit, designed only to provide power external to the transport unit must use the proper shipping name “Lithium batteries installed in cargo transport unit” found in the § 172.101 Hazardous Materials Table.

a. For the purpose of this special provision, vehicles are self-propelled apparatus designed to carry one or more persons or goods. Examples of such vehicles are electrically-powered cars, motorcycles, scooters, three- and four-wheeled vehicles or motorcycles, trucks, locomotives, bicycles (pedal cycles with an electric motor) and other vehicles of this type (e.g., self-balancing vehicles or vehicles not equipped with at least one seating position), lawn tractors, self-propelled farming and construction equipment, boats, aircraft, wheelchairs and other mobility aids. This includes vehicles transported in a packaging. In this case, some parts of the vehicle may be detached from its frame to fit into the packaging.

b. Examples of equipment are lawnmowers, cleaning machines, or model boats and model aircraft. Equipment powered by lithium metal batteries or lithium ion batteries must be described using the entries “Lithium metal batteries contained in equipment” or “Lithium metal batteries packed with equipment” or “Lithium ion batteries contained in equipment” or “Lithium ion batteries packed with equipment,” as appropriate.

c. Self-propelled vehicles or equipment that also contain an internal combustion engine must be described using the entries “Engine, internal combustion, flammable gas powered” or “Engine, internal combustion, flammable liquid powered” or “Vehicle, flammable gas powered” or “Vehicle, flammable liquid powered,” as appropriate. These entries include hybrid electric vehicles powered by both an internal combustion engine and batteries. Additionally, self-propelled vehicles or equipment that contain a fuel cell engine must be described using the entries “Engine, fuel cell, flammable gas powered” or “Engine, fuel cell, flammable liquid powered” or “Vehicle, fuel cell, flammable gas powered” or “Vehicle, fuel cell, flammable liquid powered,” as appropriate. These entries include hybrid electric vehicles powered by a fuel cell engine, an internal combustion engine, and batteries.

135 Internal combustion engines installed in a vehicle must be described using “Vehicle, flammable gas powered” or “Vehicle, flammable liquid powered,” as appropriate. If a vehicle is powered by a flammable liquid and a flammable gas internal combustion engine, it must be described using “Vehicle, flammable gas powered.” This includes hybrid electric vehicles powered by both an internal combustion engine and wet, sodium or lithium batteries installed. If a fuel cell engine is installed in a vehicle, the vehicle must be described using “Vehicle, fuel cell, flammable gas powered” or “Vehicle, fuel cell, flammable liquid powered,” as appropriate. This includes hybrid electric vehicles powered by a fuel cell, an internal combustion engine, and wet, sodium or lithium batteries installed. For the purpose of this special provision, vehicles are self-propelled apparatus designed to carry one or more persons or goods. Examples of such vehicles are cars, motorcycles, trucks, locomotives, scooters, three- and four-wheeled vehicles or motorcycles, lawn tractors, self-propelled farming and construction equipment, boats, and aircraft. Furthermore, lithium batteries installed in a cargo transport unit, designed only to provide power external to the transport unit must be described using the proper shipping name “Lithium batteries installed in cargo transport unit” found in the § 172.101 Hazardous Materials Table.

136 This entry applies only to articles, machinery, and apparatus containing hazardous materials as an integral element of the article, machinery, or apparatus. It may not be used to describe articles, machinery, or apparatus for which a proper shipping name exists in the § 172.101 Table. Except when approved by the Associate Administrator, these items may only contain hazardous materials for which exceptions are referenced in Column (8) of the § 172.101 Table and are provided in part 173, subparts D and G, of this subchapter. Hazardous materials shipped under this entry are excepted from the labeling requirements of this subchapter unless offered for transportation or transported by aircraft and are not subject to the placarding requirements of subpart F of this part. Orientation markings as described in § 172.312(a)(2) are required when liquid hazardous materials may escape due to incorrect orientation. The article, machinery, or apparatus, if unpackaged, or the packaging in which it is contained shall be marked “Dangerous goods in articles” or “Dangerous goods in machinery” or “Dangerous goods in apparatus” as appropriate, with the identification number UN3363. For transportation by aircraft, articles,

machinery, or apparatus, may not contain any material forbidden for transportation by passenger or cargo aircraft. The Associate Administrator may except from the requirements of this subchapter articles, machinery, and apparatus provided:

a. It is shown that it does not pose a significant risk in transportation;

b. The quantities of hazardous materials do not exceed those specified in § 173.4a of this subchapter; and

c. The equipment, and machinery or apparatus articles conforms with § 173.222 of this subchapter.

137 Cotton, dry; flax, dry; sisal, dry; and tampico fiber, dry are not subject to the requirements of this subchapter when they are baled in accordance with ISO 8115, “Cotton Bales — Dimensions and Density” (IBR, see § 171.7 of this subchapter) to a density of not less than 360 kg/m<3> (22.1 lb/ft<3>) for cotton, 400 kg/m<3> (24.97 lb/ft<3>) for flax, 620 kg/m<3> (38.71 lb/ft<3>) for sisal and 360 kg/m<3> (22.1 lb/ft<3>) for tampico fiber and transported in a freight container or closed transport vehicle.

138 This entry applies to lead compounds which, when mixed in a ratio of 1:1,000 with 0.07 M (Molar concentration) hydrochloric acid and stirred for one hour at a temperature of 23° C +/- 2° C, exhibit a solubility of more than 5%. Lead compounds which, when mixed in a ratio of 1:1,000 with 0.07 M (Molar concentration) hydrochloric acid and stirred for one hour at a temperature of 23° C +/- 2° C, exhibit a solubility of 5% or less are not subject to the requirements of this subchapter unless they meet criteria as another hazard class or division. Lead compounds that have a solubility of 5% or less in accordance with this special provision are not subject to the requirements of this subchapter that pertain to Marine Pollutants.

139 Use of the “special arrangement” proper shipping names for international shipments must be made under an IAEA Certificate of Competent Authority issued by the Associate Administrator in accordance with the requirements in § 173.471, § 173.472, or § 173.473 of this subchapter. Use of these proper shipping names for domestic shipments may be made only under a DOT special permit, as defined in, and in accordance with the requirements of subpart B of part 107 of this subchapter.

140 This material is regulated only when it meets the defining criteria for a hazardous substance or a marine pollutant. In addition, the column 5 reference is modified to read “III” on those occasions when this material is offered for transportation or transported by highway or rail.

141 A toxin obtained from a plant, animal, or bacterial source containing an infectious substance, or a toxin contained in an infectious substance, must be classed as Division 6.2, described as an infectious substance, and assigned to UN 2814 or UN 2900, as appropriate.

142 These hazardous materials may not be classified and transported unless authorized by the Associate Administrator. The Associate Administrator will base the authorization on results from Series 2 tests and a Series 6(c) test from the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter) on packages as prepared for transport in accordance with the requirements of this subchapter.

144 If transported as a residue in an underground storage tank (UST), as defined in 40 CFR 280.12, that has been cleaned and purged or rendered inert according to the American Petroleum Institute (API) Standard 1604 (IBR, see § 171.7 of this subchapter), then the tank and this material are not subject to any other requirements of this subchapter. However, sediments remaining in the tank that meet the definition for a hazardous material are subject to the applicable regulations of this subchapter.

145 This entry applies to formulations that neither detonate in the cavitated state nor deflagrate in laboratory testing, show no effect when heated under confinement, exhibit no explosive power, and are thermally stable (self-accelerating decomposition temperature (SADT) at 60°C (140°F) or

higher for a 50 kg (110.2 lbs.) package). Formulations not meeting these criteria must be transported under the provisions applicable to the appropriate entry in the Organic Peroxide Table in § 173.225 of this subchapter.

146 This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in § 171.8 of this subchapter, or any hazard class, as defined in part 173 of this subchapter, if it is designated as environmentally hazardous by another Competent Authority. This provision may be used for both domestic and international shipments.

147 This entry applies to non-sensitized emulsions, suspensions, and gels consisting primarily of a mixture of ammonium nitrate and fuel, intended to produce a Type E blasting explosive only after further processing prior to use. The mixture for emulsions typically has the following composition: 60-85% ammonium nitrate; 5-30% water; 2-8% fuel; 0.5-4% emulsifier or thickening agent; 0-10% soluble flame suppressants; and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate. The mixture for suspensions and gels typically has the following composition: 60-85% ammonium nitrate; 0-5% sodium or potassium perchlorate; 0-17% hexamine nitrate or monomethylamine nitrate; 5-30% water; 2-15% fuel; 0.5-4% thickening agent; 0-10% soluble flame suppressants; and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate. These substances must satisfy the criteria for classification as an ammonium nitrate emulsion of Test Series 8 of the UN Manual of Tests and Criteria, Part I, Section 18 (IBR, see § 171.7 of this subchapter), and may not be classified and transported unless approved by the Associate Administrator.

148. For domestic transportation, this entry directs to § 173.66 for:

a. The standards for transporting a single bulk hazardous material for blasting by cargo tank motor vehicles (CTMV); and

b. The standards for CTMVs capable of transporting multiple hazardous materials for blasting in bulk and non-bulk packagings (i.e., a multipurpose bulk truck (MBT)).

149 Except for transportation by aircraft, when transported as a limited quantity or a consumer commodity, the maximum net capacity specified in § 173.150(b)(2) of this subchapter for inner packagings may be increased to 5 L (1.3 gallons).

150 This description may only be used for ammonium nitrate-based fertilizers. They must be classified in accordance with the procedure as set out in the Manual of Tests and Criteria, part III, section 39 (IBR, see § 171.7 of this subchapter).

151 If this material meets the definition of a flammable liquid in § 173.120 of this subchapter, a FLAMMABLE LIQUID label is also required and the basic description on the shipping paper must indicate the Class 3 subsidiary hazard.

155 Fish meal, fish scrap and krill meal may not be transported if the temperature at the time of loading either exceeds 35° C (95° F), or exceeds 5° C (41° F) above the ambient temperature, whichever is higher.

156 Asbestos that is immersed or fixed in a natural or artificial binder material, such as cement, plastic, asphalt, resins or mineral ore, or contained in manufactured products is not subject to the requirements of this subchapter.

157 When transported as a limited quantity or a consumer commodity, the maximum net capacity specified in § 173.151(b)(1)(i) of this subchapter for inner packagings may be increased to 5 kg (11 pounds).

159 This material must be protected from direct sunshine and kept in a cool, well-ventilated place away from sources of heat.

160 This entry applies to safety devices for vehicles, vessels or aircraft, e.g. air bag inflators, air bag modules, seat-belt pretensioners, and pyromechanical devices containing Class 1 (explosive) materials or materials of other hazard classes. These articles must be tested in accordance with Test series 6(c) of Part I of the UN Manual of Tests and Criteria (incorporated by reference; see § 171.7 of this subchapter), with no explosion of the device, no fragmentation of device casing or pressure vessel, and no projection hazard or thermal effect that would significantly hinder fire-fighting or other emergency response efforts in the immediate vicinity. If the air bag inflator unit satisfactorily passes the series 6(c) test, it is not necessary to repeat the test on the air bag module. This entry does not apply to life saving appliances described in § 173.219 (UN2990 and UN3072).

162 This material may be transported under the provisions of Division 4.1 only if it is packed so that at no time during transport will the percentage of diluent fall below the percentage that is stated in the shipping description.

163 Substances must satisfactorily pass Test Series 8 of the UN Manual of Tests and Criteria, Part I, Section 18 (IBR, see § 171.7 of this subchapter).

164 Substances must not be transported under this entry unless approved by the Associate Administrator on the basis of the results of appropriate tests according to Part I of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter). The material must be packaged so that the percentage of diluent does not fall below that stated in the approval at any time during transportation.

165 These substances are susceptible to exothermic decomposition at elevated temperatures. Decomposition can be initiated by heat, moisture or by impurities (e.g., powdered metals (iron, manganese, cobalt, magnesium)). During the course of transportation, these substances must be shaded from direct sunlight and all sources of heat and be placed in adequately ventilated areas.

166 When transported in non-friable tablet form, calcium hypochlorite, dry, may be transported as a Packing Group III material.

167 These storage systems must always be considered as containing hydrogen. A metal hydride storage system installed in or intended to be installed in a vehicle or equipment or in vehicle or equipment components must be approved for transport by the Associate Administrator. A copy of the approval must accompany each shipment.

168 For lighters containing a Division 2.1 gas (See § 171.8 of this subchapter), representative samples of each new lighter design must be examined and successfully tested as specified in § 173.308(b)(3). For criteria in determining what is a new lighter design, See § 173.308(b)(1). For transportation of new lighter design samples for examination and testing, See § 173.308(b)(2). The examination and testing of each lighter design must be performed by a person authorized by the Associate Administrator under the provisions of subpart E of part 107 of this chapter, as specified in § 173.308(a)(4). For continued use of approvals dated prior to January 1, 2012, See § 173.308(b)(5).

> For non-pressurized lighters containing a Class 3 (flammable liquid) material, its design, description, and packaging must be approved by the Associate Administrator prior to being offered for transportation or transported in commerce. In addition, a lighter design intended to contain a non-pressurized Class 3 material is excepted from the examination and testing criteria specified in § 173.308(b)(3). An unused lighter or a lighter that is cleaned of residue and purged of vapors is not subject to the requirements of this subchapter.

169 This entry applies to lighter refills (See § 171.8 of this subchapter) that contain a Division 2.1 (flammable) gas but do not contain an ignition device. Lighter refills offered for transportation under this entry may not exceed 4 fluid ounces capacity (7.22 cubic inches) or contain more than 65 grams of fuel. A lighter refill exceeding 4 fluid ounces capacity (7.22 cubic inches) or containing more than 65 grams of fuel must be classed as a Division 2.1 material, described with the proper

shipping name appropriate for the material, and packaged in the packaging specified in part 173 of this subchapter for the flammable gas contained therein. In addition, a container exceeding 4 fluid ounces volumetric capacity (7.22 cubic inches) or containing more than 65 grams of fuel may not be connected or manifolded to a lighter or similar device and must also be described and packaged according to the fuel contained therein. For transportation by passenger-carrying aircraft, the net mass of lighter refills may not exceed 1 kg per package, and, for cargo-only aircraft, the net mass of lighter refills may not exceed 15 kg per package. See § 173.306(h) of this subchapter.

170 Air must be eliminated from the vapor space by nitrogen or other means.

171 This entry may only be used when the material is transported in non-friable tablet form or for granular or powered mixtures that have been shown to meet the PG III criteria in § 173.127.

172 This entry includes alcohol mixtures containing up to 5% petroleum products.

173. For adhesives, printing inks, printing ink-related materials, paints, paint-related materials, and resin solutions which are assigned to UN3082, and do not meet the definition of another hazard class, metal or plastic packaging for substances of packing groups II and III in quantities of 5 L (1.3 gallons) or less per packaging are not required to meet the UN performance package testing when transported:

a. Except for transportation by aircraft, in palletized loads, a pallet box or unit load device (e.g. individual packaging placed or stacked and secured by strapping, shrink or stretch-wrapping or other suitable means to a pallet). For vessel transport, the palletized loads, pallet boxes or unit load devices must be firmly packed and secured in closed cargo transport units; or

b. Except for transportation by aircraft, as an inner packaging of a combination packaging with a maximum net mass of 40 kg (88 pounds). For transportation by aircraft, as an inner packaging of a combination packaging with a maximum gross mass of 30 kg when packaged as a limited quantity in accordance with § 173.27(f).

175 This substance must be stabilized when in concentrations of not more than 99%.

176. This entry must be used for formaldehyde solutions containing methanol as a stabilizer. Formaldehyde solutions not containing methanol and not meeting the Class 3 flammable liquid criteria must be described using a different proper shipping name.

177 Gasoline, or, ethanol and gasoline mixtures, for use in internal combustion engines (e.g., in automobiles, stationary engines and other engines) must be assigned to Packing Group II regardless of variations in volatility.

181 When a package contains a combination of lithium batteries contained in equipment and lithium batteries packed with equipment, the following requirements apply:

a. The shipper must ensure that all applicable requirements of § 173.185 of this subchapter are met. The total mass of lithium batteries contained in any package must not exceed the quantity limits in columns (9A) and (9B) for passenger aircraft or cargo aircraft, as applicable;

b. Except as provided in § 173.185(c)(3) of this subchapter, the package must be marked “UN 3091 Lithium metal batteries packed with equipment”, or “UN 3481 Lithium ion batteries packed with equipment,” as appropriate. If a package contains both lithium metal batteries and lithium ion batteries packed with and contained in equipment, the package must be marked as required for both battery types. However, button cell batteries installed in equipment (including circuit boards) need not be considered; and

c. The shipping paper must indicate “UN 3091 Lithium metal batteries packed with equipment” or “UN 3481 Lithium ion batteries packed with equipment,” as appropriate. If a package contains both lithium metal batteries and lithium ion batteries packed with and contained in equipment, then the shipping paper must indicate both “UN 3091 Lithium metal batteries packed with equipment” and “UN 3481 Lithium ion batteries packed with equipment.”

182 Equipment containing only lithium batteries must be classified as either UN 3091 or UN 3481.

196 The nitrocellulose must meet the criteria of the Bergmann-Junk test or methyl violet paper test in the UN Manual of Tests and Criteria, Appendix 10 (IBR, see § 171.7 of this subchapter). Test of type 3(c) is not required.

197 The nitrocellulose must meet the criteria of the Bergmann-Junk test or methyl violet paper test in the UN Manual of Tests and Criteria, Appendix 10 (IBR, see § 171.7 of this subchapter).

198 Nitrocellulose solutions containing not more than 20% nitrocellulose may be transported as paint, perfumery products, or printing ink, as applicable, provided the nitrocellulose contains no more 12.6% nitrogen (by dry mass). See UN1210, UN1263, UN1266, UN3066, UN3469, and UN3470.

200 Division 1.4G consumer fireworks may be certified for transportation by a DOT-approved Fireworks Certification Agency in accordance with the provisions of § 173.65 of this subchapter.

237 “Batteries, dry, containing potassium hydroxide solid, electric storage” must be prepared and packaged in accordance with the requirements of § 173.159(a) and (c). For transportation by aircraft, the provisions of § 173.159(b)(2) apply. This entry may only be used for the transport of non-activated batteries that contain dry potassium hydroxide and that are intended to be activated prior to use by the addition of an appropriate amount of water to the individual cells.

238 Neutron radiation detectors: Neutron radiation detectors containing non-pressurized boron trifluoride gas in excess of 1 gram (0.035 ounces) and radiation detection systems containing such neutron radiation detectors as components may be transported by highway, rail, vessel, or cargo aircraft in accordance with the following:

a. Each radiation detector must meet the following conditions:

(1) The pressure in each neutron radiation detector must not exceed 105 kPa absolute at 20 degreesC (68 degreesF);

(2) The amount of gas must not exceed 13 grams (0.45 ounces) per detector; and

(3) Each neutron radiation detector must be of welded metal construction with brazed metal to ceramic feed through assemblies. These detectors must have a minimum burst pressure of 1800 kPa as demonstrated by design type qualification testing; and

(4) Each detector must be tested to a 1 10-10 cm3/s leaktightness standard before filling.

b. Radiation detectors transported as individual components must be transported as follows:

(1) They must be packed in a sealed intermediate plastic liner with sufficient absorbent or adsorbent material to absorb or adsorb the entire gas contents.

(2) They must be packed in strong outer packagings and the completed package must be capable of withstanding a 1.8 meter (5.9 feet) drop without leakage of gas contents from detectors.

(3) The total amount of gas from all detectors per outer packaging must not exceed 52 grams (1.83 ounces).

c. Completed neutron radiation detection systems containing detectors meeting the conditions of paragraph a of this special provision must be transported as follows:

(1) The detectors must be contained in a strong sealed outer casing;

(2) The casing must contain include sufficient absorbent or adsorbent material to absorb or adsorb the entire gas contents;

(3) The completed system must be packed in strong outer packagings capable of withstanding a 1.8 meter (5.9 feet) drop test without leakage unless a system's outer casing affords equivalent protection.

d. Except for transportation by aircraft, neutron radiation detectors and radiation detection systems containing such detectors transported in accordance with paragraph a of this special provision are not subject to the labeling and placarding requirements of part 172 of this subchapter.

e. When transported by highway, rail, vessel, or as cargo on an aircraft, neutron radiation detectors containing not more than 1 gram of boron trifluoride, including those with solder glass joints are not subject to any other requirements of this subchapter provided they meet the requirements in paragraph a of this special provision and are packed in accordance with paragraph b of this special provision. Radiation detection systems containing such detectors are not subject to any other requirements of this subchapter provided they are packed in accordance with paragraph c of this special provision.

325 In the case of non-fissile or fissile-excepted uranium hexafluoride, the material must be classified under UN 2978.

328 When lithium metal or lithium ion batteries are contained in the fuel cell system, the item must be described under this entry and the appropriate entries for "Lithium metal batteries contained in equipment" or "Lithium ion batteries contained in equipment".

332 Magnesium nitrate hexahydrate is not subject to the requirements of this subchapter.

335 Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s," UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leakproof when used as bulk packaging.

336 The use of UN1H1 drums, UN3H1 jerricans, and UN6HA1 composite packagings which meet the requirements of Part 178 of the HMR at the Packing Group I or II performance level. These packagings are not required to: (1.) meet the venting requirements in § 173.24(g) or (2.) be marked with the hydrostatic pressure test marking specified in § 173.24a(b)(4). Shipment of packages under this special provision must be made by private or contract motor carrier. Transportation of these packages also requires the door of each van trailer to be marked with "Warning trailer may contain chemical vapor. Do not enter until vapors have dissipated." The driver of the transport vehicle and the consignee(s) must be trained not to enter the transport vehicle until the ammonia vapors have dissipated, and the emergency response information on the shipping paper must indicate that the vehicle contains ammonia vapors. This training must be documented in training records required by § 172.704(d). Transport vehicles must be vented to prevent accumulation of vapors at a poisonous or flammable concentration.

337 Authorizes the use of regulated waste containers manufactured prior to October 1, 2006 to be marked with the alternative shipping name of Regulated medical waste, UN3291 and arrows that deviate as prescribed in § 172.312(a)(2) in that they may be black or white.

338 Life Saving appliances, self-inflating transported by motor vehicle only between an U.S. Coast Guard approved inflatable life raft servicing facility and a vessel are only subject to the following requirements:

a. Prior to repacking into the life-saving appliance, an installed inflation cylinder must successfully meet and pass all inspection and test criteria and standards of the raft manufacturer and the vessel Flag State requirements for cylinders installed as part of life-saving appliances, self-inflating (UN2990) used on marine vessels. Additionally, each cylinder must be visually inspected in accordance with CGA pamphlet, CGA C-6 (incorporated by

reference, see § 171.7). A current copy of CGA pamphlet, CGA C-6 must be available at the facility servicing the life-saving appliance.

b. An installed inflation cylinder that requires recharging must be filled in accordance with § 173.301(l).

c. Every installed inflation cylinder, as associated equipment of the life-saving appliance, must be packed within the protective packaging of the life raft and the life raft itself must otherwise be in compliance with § 173.219.

d. The serial number for each cylinder must be recorded as part of the life-saving appliance service record by the U.S. Coast Guard-approved servicing facility.

340 This entry applies only to the vessel transportation of nickel-metal hydride batteries as cargo. Nickel-metal hydride button cells or nickel-metal hydride cells or batteries packed with or contained in battery-powered devices transported by vessel are not subject to the requirements of this special provision. See “Batteries, dry, sealed, n.o.s.” in the § 172.101 Hazardous Materials Table (HMT) of this part for transportation requirements for nickel-metal hydride batteries transported by other modes and for nickel-metal hydride button cells or nickel-metal hydride cells or batteries packed with or contained in battery-powered devices transported by vessel. Nickel-metal hydride batteries subject to this special provision are subject only to the following requirements: (1) The batteries must be prepared and packaged for transport in a manner to prevent a dangerous evolution of heat, short circuits, and damage to terminals; and are subject to the incident reporting in accordance with § 171.16 of this subchapter if a fire, violent rupture, explosion or dangerous evolution of heat (i.e., an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a nickel metal hydride battery; and (2) when loaded in a cargo transport unit in a total quantity of 100 kg gross mass or more, the shipping paper requirements of Subpart C of this part, the manifest requirements of § 176.30 of this subchapter, and the vessel stowage requirements assigned to this entry in Column (10) of the § 172.101 Hazardous Materials Table.

342 Glass inner packagings (such as ampoules or capsules) intended only for use in sterilization devices, when containing less than 30 mL of ethylene oxide per inner packaging with not more than 300 mL per outer packaging, may be transported in accordance with § 173.4a of this subchapter, irrespective of the restriction of § 173.4a(b) and the indication of “forbidden” in columns (9A) and (9B) of the § 172.101 table provided that:

a. After filling, each glass inner packaging must be determined to be leak-tight by placing the glass inner packaging in a hot water bath at a temperature and for a period of time sufficient to ensure that an internal pressure equal to the vapor pressure of ethylene oxide at 55° C is achieved. Any glass inner packaging showing evidence of leakage, distortion or other defect under this test must not be transported under the terms of this special provision;

b. In addition to the packaging required in § 173.4a, each glass inner packaging must be placed in a sealed plastic bag compatible with ethylene oxide and capable of containing the contents in the event of breakage or leakage of the glass inner packaging; and

c. Each glass inner packaging is protected by a means of preventing puncture of the plastic bag (e.g., sleeves or cushioning) in the event of damage to the packaging (e.g., by crushing).

343 A bulk packaging that emits hydrogen sulfide in sufficient concentration that vapors evolved from the sour crude oil can present an inhalation hazard must be marked as specified in § 172.327.

345 “Nitrogen, refrigerated liquid (cryogenic liquid), UN1977" transported in open cryogenic receptacles with a maximum capacity of 1 L are not subject to the requirements of this subchapter. The receptacles must be constructed with glass double walls having the space between the walls vacuum insulated and each receptacle must be transported in an outer packaging with sufficient cushioning and absorbent materials to protect the receptacle from damage.

346 “Nitrogen, refrigerated liquid (cryogenic liquid), UN1977" transported in accordance with the requirements for open cryogenic receptacles in § 173.320 and this special provision are not subject to any other requirements of this subchapter. The receptacle must contain no hazardous materials other than the liquid nitrogen which must be fully absorbed in a porous material in the receptacle.

347 Effective July 1, 2011, for transportation by aircraft, this entry may only be used if the results of Test series 6(d) of Part I of the UN Manual of Tests and Criteria (IBR, See § 171.7 of this subchapter) have demonstrated that any hazardous effects from accidental functioning are confined to within the package. Effective January 1, 2012, for transportation by vessel, this entry may only be used if the results of Test Series 6(d) of Part I of the UN Manual of Tests and Criteria (IBR, See § 171.7 of this subchapter) have demonstrated that any hazardous effects from accidental functioning are confined to within the package. Effective January 1, 2014, for transportation domestically by highway or rail, this entry may only be used if the results of Test Series 6(d) of Part I of the UN Manual of Tests and Criteria (IBR, See § 171.7 of this subchapter) have demonstrated that any hazardous effects from accidental functioning are confined to within the package. Testing must be performed or witnessed by a person who is approved by the Associate Administrator (See § 173.56(b) of this subchapter). All successfully conducted tests or reassignment to another compatibility group require the issuance of a new or revised approval by the Associate Administrator prior to transportation on or after the dates specified for each authorized mode of transport in this special provision.

349 Mixtures of hypochlorite with an ammonium salt are forbidden for transport. A hypochlorite solution, UN1791, is a Class 8 corrosive material.

350 Ammonium bromate, ammonium bromate aqueous solutions, and mixtures of a bromate with an ammonium salt are forbidden for transport.

351 Ammonium chlorate, ammonium chlorate aqueous solutions, and mixtures of a chlorate with an ammonium salt are forbidden for transport.

352 Ammonium chlorite, ammonium chlorite aqueous solutions, and mixtures of a chlorite with an ammonium salt are forbidden for transport.

353 Ammonium permanganate, ammonium permanganate aqueous solutions, and mixtures of a permanganate with an ammonium salt are forbidden for transport.

357 A bulk packaging that emits hydrogen sulfide in sufficient concentration that vapors evolved from the crude oil can present an inhalation hazard must be marked as specified in § 172.327 of this part.

360 Vehicles powered only by lithium batteries must be described using “UN3171, Battery-powered vehicle.” Lithium batteries installed in a cargo transport unit, designed only to provide power external to the transport unit, must be described using “UN3536, Lithium batteries installed in a cargo transport unit.”

361 Capacitors with an energy storage capacity of 0.3 Wh or less are not subject to the requirements of this subchapter. Energy storage capacity means the energy held by a capacitor, as calculated using the nominal voltage and capacitance. This entry does not apply to capacitors that by design maintain a terminal voltage (e.g., asymmetrical capacitors.)

362 This entry applies to liquids, pastes or powders, pressurized with a propellant that meets the definition of a gas in § 173.115. A chemical under pressure packaged in an aerosol dispenser must be transported under UN1950. The chemical under pressure must be classed based on the hazard characteristics of the components in the propellant; the liquid; or the solid. The following provisions also apply:

a. If one of the components, which can be a pure substance or a mixture, is classed as flammable, the chemical under pressure must be classed as flammable in Division 2.1.

Flammable components are flammable liquids and liquid mixtures, flammable solids and solid mixtures or flammable gases and gas mixtures meeting the following criteria:

(1) A flammable liquid is a liquid having a flashpoint of not more than 93° C (200° F);

(2) A flammable solid is a solid that meets the criteria in § 173.124 of this subchapter; or

(3) A flammable gas is a gas that meets the criteria in § 173.115 of this subchapter.

b. Gases of Division 2.3 and gases with a subsidiary risk of 5.1 must not be used as a propellant in a chemical under pressure.

c. Where the liquid or solid components are classed as Division 6.1, Packing Group II or III, or Class 8, Packing Group II or III, the chemical under pressure must be assigned a subsidiary risk of Division 6.1 or Class 8 and the appropriate identification number must be assigned. Components classed as Division 6.1, Packing Group I, or Class 8, Packing Group I, must not be offered for transportation and transported under this description.

d. A chemical under pressure with components meeting the properties of: Class 1 (explosives); Class 3 (liquid desensitized explosives); Division 4.1 (self-reactive substances and solid desensitized explosives); Division 4.2 (substances liable to spontaneous combustion); Division 4.3 (substances which, in contact with water, emit flammable gases or toxic gases); Division 5.1 (oxidizing substances); Division 5.2 (organic peroxides); Division 6.2 (Infectious substances); or, Class 7 (Radioactive material), must not be offered for transportation under this description.

e. A description to which special provision 170 or TP7 is assigned in Column 7 of the § 172.101 Hazardous Materials Table, and therefore requires air to be eliminated from the package vapor space by nitrogen or other means, must not be offered for transportation under this description.

f. Chemicals under pressure containing components forbidden for transport on both passenger and cargo aircraft in Columns (9A) and (9B) of the § 172.101 Hazardous Materials Table must not be transported by air.

365 For manufactured instruments and articles containing mercury, see UN3506.

367 For the purposes of documentation and package marking:

a. The proper shipping name “Paint related material” may be used for consignments of packages containing “Paint” and “Paint related material” in the same package;

b. The proper shipping name “Paint related material, corrosive, flammable” may be used for consignments of packages containing “Paint, corrosive, flammable” and “Paint related material, corrosive, flammable” in the same package;

c. The proper shipping name “Paint related material, flammable, corrosive” may be used for consignments of packages containing “Paint, flammable, corrosive” and “Paint related material, flammable, corrosive” in the same package; and

d. The proper shipping name “Printing ink related material” may be used for consignments of packages containing “Printing ink” and “Printing ink related material” in the same package.

368 In the case of non-fissile or fissile-excepted uranium hexafluoride, the material must be classified under UN3507 or UN2978.

369 In accordance with § 173.2a of this subchapter, this radioactive material in an excepted package possessing toxic and corrosive properties is classified in Division 6.1 with radioactivity and corrosive subsidiary risks. Uranium hexafluoride may be classified under this entry only if the conditions of §§ 173.420(a)(4) and (6) and (d) and 173.421(b) and (d) of this subchapter, and, for fissile-excepted material, the conditions of § 173.453 of this subchapter are met. In addition to the provisions applicable to the transport of Division 6.1 substances, the provisions of §§ 173.421(c)

and 173.443(a) of this subchapter apply. In addition, packages shall be legibly and durably marked with an identification of the consignor, the consignee, or both. No Class 7 label is required to be displayed. The consignor shall be in possession of a copy of each applicable certificate when packages include fissile material excepted by competent authority approval. When a consignment is undeliverable, the consignment shall be placed in a safe location and the appropriate competent authority shall be informed as soon as possible and a request made for instructions on further action. If it is evident that a package of radioactive material, or conveyance carrying unpackaged radioactive material, is leaking, or if it is suspected that the package, or conveyance carrying unpackaged material, may have leaked, the requirements of § 173.443(e) of this subchapter apply.

370 This entry also applies to ammonium nitrate with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any added substance, that gives a positive result when tested in accordance with Test Series 2 of the UN Manual of Tests and Criteria, Part I (IBR; see § 171.7 of this subchapter). See also UN1942 in the § 172.101 Hazardous Materials Table. This entry may not be used for ammonium nitrate for which a proper shipping name already exists in the § 172.101 Hazardous Materials Table, including ammonium nitrate mixed with fuel oil or any other commercial grade of ammonium nitrate (e.g., ammonium nitrate fertilizer).

371

a. This entry also applies to articles not conforming to the requirements of §§ 173.302, 173.304, or 173.306 of this subchapter, containing a small pressure receptacle with a release device. Such articles must comply with the following requirements:

b. The manufacturer must produce technical documentation of the design type, manufacture as well as the tests and their results. The manufacturer must apply procedures to ensure that articles produced in series are made of good quality, conform to the design type and are able to meet the requirements in (a). The manufacturer must provide such information to a representative of the Department upon request.

372 This entry applies to asymmetric capacitors with an energy storage capacity greater than 0.3 Wh. Capacitors with an energy storage capacity of 0.3 Wh or less are not subject to the requirements of this subchapter.

Energy storage capacity means the energy stored in a capacitor, as calculated according to the following equation,

Wh = 1/2C[N] (U[R] <2>-U[L] <2>) x (1/3600)

Using the nominal capacitance (C[N]), rated voltage (U[R]) and the rated lower limit voltage (U[L]).

Nickel-carbon asymmetric capacitors containing Class 8 alkaline electrolytes must be transported as UN2795, Batteries, wet, filled with alkali, electric storage.

379 When offered for transport by highway, rail, or cargo vessel, anhydrous ammonia adsorbed or absorbed on a solid contained in ammonia dispensing systems or receptacles intended to form part of such systems is not subject to the requirements of this subchapter if the following conditions in this provision are met. In addition to meeting the conditions in this provision, transport on cargo aircraft only may be authorized with prior approval of the Associate Administrator.

a. The adsorption or absorption presents the following properties:

(1) The pressure at a temperature of 20° C (68° F) in the receptacle is less than 0.6 bar (60 kPa);

(2) The pressure at a temperature of 35° C (95° F) in the receptacle is less than 1 bar (100 kPa);

(3) The pressure at a temperature of 85° C (185° F) in the receptacle is less than 12 bar (1200 kPa).

b. The adsorbent or absorbent material shall not meet the definition or criteria for inclusion in Classes 1 to 8;

c. The maximum contents of a receptacle shall be 10 kg of ammonia; and

d. Receptacles containing adsorbed or absorbed ammonia shall meet the following conditions:

(1) Receptacles shall be made of a material compatible with ammonia as specified in ISO 11114-1:2012(E) and ISO 11114-1:2012/Amd 1:2017(E) (IBR, see § 171.7 of this subchapter);

(2) Receptacles and their means of closure shall be hermetically sealed and able to contain the generated ammonia;

(3) Each receptacle shall be able to withstand the pressure generated at 85° C (185° F) with a volumetric expansion no greater than 0.1%;

(4) Each receptacle shall be fitted with a device that allows for gas evacuation once pressure exceeds 15 bar (1500 kPa) without violent rupture, explosion or projection; and

(5) Each receptacle shall be able to withstand a pressure of 20 bar (2000 kPa) without leakage when the pressure relief device is deactivated.

e. When offered for transport in an ammonia dispenser, the receptacles shall be connected to the dispenser in such a way that the assembly is guaranteed to have the same strength as a single receptacle.

f. The properties of mechanical strength mentioned in this special provision shall be tested using a prototype of a receptacle and/or dispenser filled to nominal capacity, by increasing the temperature until the specified pressures are reached.

g. The test results shall be documented, shall be traceable, and shall be made available to a representative of the Department upon request.

380 For transportation by private carrier in a motor carrier only, this material is not subject to the segregation requirements of § 177.848(d) of this subchapter under the following conditions:

a. The material is packaged in a DOT Specification 4BW240 cylinder, or in a DOT-51 portable tank.

b. The material may only be loaded with Class 3, Class 8, and Division 4.1 materials in Packing Group II or III.

c. The motor carrier must maintain a satisfactory safety rating as prescribed in 49 CFR part 385.

381 For railroad flagging kits, see § 173.184 (c) of this subchapter.

382 Packages containing toy plastic or paper caps for toy pistols described as “UN0349, Articles, explosive, n.o.s. (Toy caps), 1.4S” or “NA0337, Toy caps, 1.4S” are not subject to the subpart E (labeling) requirements of this part when offered for transportation by motor vehicle, rail freight, cargo vessel, and cargo aircraft and, notwithstanding the packing method assigned in § 173.62 of this subchapter, in conformance with the following conditions:

a. The toy plastic or paper caps must be in the form of sheets, strips, rolls, or individual caps;

b. The caps must not contain more than an average of twenty-five hundredths of a grain of explosive composition per cap;

c. The caps must be packed inside packagings constructed of cardboard not less than 0.013-inch in thickness, metal not less than 0.008-inch in thickness, non-combustible plastic not less

than 0.015-inch in thickness, or a composite blister package consisting of cardboard not less than 0.013-inch in thickness and non-combustible plastic not less than 0.005-inch in thickness that completely encloses the caps;

d. The minimum dimensions of each side and each end of the cardboard packaging must be 1/8th inch in height or more;

e. The number of caps inside each packaging must be limited so that not more than 10 grains of explosives composition may be packed into one cubic inch of space, and not more than 17.5 grains of the explosive composition of toy caps may be packed in any inner packaging;

f. Inner packagings must be packed in outer packagings meeting PG II performance criteria;

g. Toy caps may be packed with non-explosive or non-flammable articles provided the outer packagings are marked as prescribed in this paragraph;

h. Toy paper caps of any kind must not be packed in the same packaging with fireworks;

i. The outside of each package must be plainly marked “ARTICLES, EXPLOSIVES, N.O.S. (TOY CAPS) — HANDLE CAREFULLY” OR “TOY CAPS — HANDLE CAREFULLY”; and

j. Explosives shipped in conformance with this paragraph must have been examined in accordance with § 173.56 of this subchapter and approved by the Associate Administrator.

383 For transportation by motor vehicle, substances meeting the conditions for high viscosity flammable liquids as prescribed in § 173.121(b)(1)(i), (b)(1)(ii), and (b)(1)(iv) of this subchapter, may be reassigned to Packing Group III under the following conditions:

a. Packaging must be UN standard metal drums attached with heavy duty steel strapping to a pallet; and

b. The capacity of each drum must not exceed 220 L (58 gallons).

384 For green graphite electrodes and shapes that are large single component solid objects not subject to shifting, transport in open rail flat cars, open bed motor vehicles, and intermodal containers is also authorized. The objects must be secured to the flat car, motor vehicle, intermodal container, or unitized by steel banding to wooden runners or pallets and the units secured to the flat car, motor vehicle, or freight container to prevent shifting, including relative motion between the objects, under conditions normally incident to transportation. Stacking is permitted two or more levels high to achieve maximum allowable utilization of the designated vehicle, rail car weight, or intermodal freight container weight or vessel hold volume.

385 Notwithstanding the provisions of § 177.834(l) of this subchapter, cargo heaters may be used when weather conditions are such that the freezing of a wetted explosive material is likely. Shipments must be made by private, leased or contract carrier vehicles under exclusive use of the offeror. Cargo heaters must be reverse refrigeration (heat pump) units. Shipments made in accordance with this Special provision are excepted from the requirements of § 173.60(b)(4) of this subchapter.

386 When transported by private motor carrier only, the following corrosive liquids may be packaged in polyethylene bottles with a capacity no greater than 3.785 L (one gallon), further packed inside an open-top, heavy wall, high density polyethylene box (i.e., crate) in a manner that the polyethylene bottles are not subjected to any superimposed weight, and the boxes must be reasonably secured against shifting within the transport vehicle and loaded so as to minimize the possibility of coming in contact with other lading:

Compounds, cleaning liquid, NA1760, PG II or III;

Corrosive liquid, acidic, inorganic, n.o.s., UN3264, PG II;

Corrosive liquid, acidic, organic, n.o.s., UN 3265, PG III;

Corrosive liquid, basic, inorganic, n.o.s., UN3266, PG II;

Hypochlorite solutions, UN1791, PG III;

Hydrochloric acid solution, UN 1789, PG II; and

Sulfuric acid, UN2796, PG II.

a. No more than four bottles, securely closed with threaded caps, may be packed in each box.

b. Each empty bottle must have a minimum weight of not less than 140 grams and a minimum wall thickness of not less than 0.020 inch (0.508 mm).

c. The completed package must meet the Packing Group II performance level, as applicable for combination packagings with a plastic box outer packaging, in accordance with subpart M of part 178 of this subchapter.

(i) Tests must be performed on each type and size of bottle, for each manufacturing location. Samples taken at random must withstand the prescribed tests without breakage or leakage.

(ii) One bottle for every two hours of production, or for every 2,500 bottles produced, must be tested by dropping a bottle filled to 98 percent capacity with water from a height of 1.2 meters (3.9 feet) onto solid concrete directly on the closure.

(iii) A copy of the test results must be kept on file at each facility where packagings are offered for transportation, and must be made available to a representative of the Department upon request.

(iv) The name or symbol of the bottle producer, and the month and year of manufacture, must be marked by embossing, ink-jet printing of permanent ink, or other permanent means on the face or bottom of each bottle, in letters and numbers at least 6 mm (0.2 inch) high. Symbols, if used, must be registered with the Associate Administrator.

(v) The box must be constructed from high-density polyethylene in the density range 0.950-0.962, and be capable of holding liquid when in the upright position.

387 When materials are stabilized by temperature control, the provisions of § 173.21(f) of this subchapter apply. When chemical stabilization is employed, the person offering the material for transport shall ensure that the level of stabilization is sufficient to prevent the material as packaged from dangerous polymerization at 50 degreesC (122 degreesF). If chemical stabilization becomes ineffective at lower temperatures within the anticipated duration of transport, temperature control is required and is forbidden by aircraft. In making this determination factors to be taken into consideration include, but are not limited to, the capacity and geometry of the packaging and the effect of any insulation present, the temperature of the material when offered for transport, the duration of the journey, and the ambient temperature conditions typically encountered in the journey (considering also the season of year), the effectiveness and other properties of the stabilizer employed, applicable operational controls imposed by regulation (e.g., requirements to protect from sources of heat, including other cargo carried at a temperature above ambient) and any other relevant factors. The provisions of this special provision will be effective until January 2, 2023, unless we terminate them earlier or extend them beyond that date by notice of a final rule in the Federal Register.

388 Lithium batteries containing both primary lithium metal cells and rechargeable lithium ion cells that are not designed to be externally charged, must meet the following conditions:

(a)

i. The rechargeable lithium ion cells can only be charged from the primary lithium metal cells;

ii. Overcharge of the rechargeable lithium ion cells is precluded by design;

iii. The battery has been tested as a primary lithium battery; and

iv. Component cells of the battery must be of a type proved to meet the respective testing requirements of the Manual of Tests and Criteria, part III, subsection 38.3 (IBR, see § 171.7 of this subchapter).

b. Lithium batteries conforming to paragraph a. of this special provision must be assigned to UN Nos. 3090 or 3091, as appropriate. When such batteries are transported in accordance with § 173.185(c), the total lithium content of all lithium metal cells contained in the battery must not exceed 1.5 g and the total capacity of all lithium ion cells contained in the battery must not exceed 10 Wh.

389 This entry only applies to lithium ion batteries or lithium metal batteries installed in a cargo transport unit and designed only to provide power external to the cargo transport unit. The lithium batteries must meet the requirements of § 173.185(a) and contain the necessary systems to prevent overcharge and over discharge between the batteries. The batteries must be securely attached to the interior structure of the cargo transport unit (e.g., by means of placement in racks, cabinets, etc.) in such a manner as to prevent short circuits, accidental operation, and significant movement relative to the cargo transport unit under the shocks, loadings, and vibrations normally incident to transport. Hazardous materials necessary for the safe and proper operation of the cargo transport unit (e.g., fire extinguishing systems and air conditioning systems), must be properly secured to or installed in the cargo transport unit and are not otherwise subject to this subchapter. Hazardous materials not necessary for the safe and proper operation of the cargo transport unit must not be transported within the cargo transport unit. The batteries inside the cargo transport unit are not subject to marking or labelling requirements of part 172 subparts D and E of this subchapter. The cargo transport unit shall display the UN number in a manner in accordance with § 172.332 of this subchapter and be placarded on two opposing sides. For transportation by aircraft, cargo transport units may only be offered for transportation and transported under conditions approved by the Associate Administrator.

391 Except for articles being transported by motor vehicle as a material of trade in accordance with § 173.6 of this subchapter, articles containing hazardous materials of Division 2.3, or Division 4.2, or Division 4.3, or Division 5.1, or Division 5.2, or Division 6.1 (substances with an inhalation toxicity of Packing Group I) and articles containing more than one of the following hazards: (1) Gases of Class 2; (2) Liquid desensitized explosives of Class 3; or (3) Self-reactive substances and solid desensitized explosives of Division 4.1, may only be offered for transportation and transported under conditions approved by the Associate Administrator.

420 This entry does not apply to manufactured articles (such as table tennis balls).

421 This entry will no longer be effective on January 2, 2023, unless we terminate it earlier or extend it beyond that date by notice of a final rule in the Federal Register.

422 When labelling is required, the label to be used must be the label shown in § 172.447. When a placard is displayed, the placard must be the placard shown in § 172.560.

430 This entry shall only be used for solid medical waste of Category A transported for disposal.

440 When this material is transported by tank car, the offeror must ensure each tank car is remotely monitored for pressure and location. Additionally, the offeror must notify the carrier if the tank pressure rise exceeds 3 psig over any 24- hour period.

441 For marine pollutants transported under “UN3077, Environmentally hazardous substance, solid, n.o.s.” or “UN3082, Environmentally hazardous substance, liquid, n.o.s.” and for purposes of shipping paper and package marking requirements, the technical name used in association with the basic description may be a proper shipping name listed in the § 172.101 Hazardous Material Table;

provided that the name chosen is not also an entry that includes “n.o.s.” as a part of the name or one that has a “G” in column (1) of the table.

(2) “A” codes. These provisions apply only to transportation by aircraft:

Code/Special Provisions

A1 Single packagings are not permitted on passenger aircraft.

A2 Single packagings are not permitted on aircraft.

A3 For combination packagings, if glass inner packagings (including ampoules) are used, they must be packed with absorbent material in tightly closed rigid and leakproof receptacles before packing in outer packagings.

A4 Liquids having an inhalation toxicity of Packing Group I are not permitted on aircraft.

A5 Solids having an inhalation toxicity of Packing Group I are not permitted on passenger aircraft and may not exceed a maximum net quantity per package of 15 kg (33 pounds) on cargo aircraft.

A6 For combination packagings, if plastic inner packagings are used, they must be packed in tightly closed metal receptacles before packing in outer packagings.

A7 Steel packagings must be corrosion-resistant or have protection against corrosion.

A8 For combination packagings, if glass inner packagings (including ampoules) are used, they must be packed with cushioning material in tightly closed metal receptacles before packing in outer packagings.

A9 For combination packagings, if plastic bags are used, they must be packed in tightly closed metal receptacles before packing in outer packagings.

A10 When aluminum or aluminum alloy construction materials are used, they must be resistant to corrosion.

A11 For combination packagings, when metal inner packagings are permitted, only specification cylinders constructed of metals which are compatible with the hazardous material may be used.

A13 Bulk packagings are not authorized for transportation by aircraft.

A14 This material is not authorized to be transported as a limited quantity or consumer commodity in accordance with § 173.306 of this subchapter when transported aboard an aircraft.

A19 Combination packagings consisting of outer fiber drums or plywood drums, with inner plastic packagings, are not authorized for transportation by aircraft.

A20 Plastic bags as inner receptacles of combination packagings are not authorized for transportation by aircraft.

A29 Combination packagings consisting of outer expanded plastic boxes with inner plastic bags are not authorized for transportation by aircraft.

A30 Ammonium permanganate is not authorized for transportation on aircraft.

A34 Aerosols containing a corrosive liquid in Packing Group II charged with a gas are not permitted for transportation by aircraft.

A35 This includes any material which is not covered by any of the other classes but which has an anesthetic, narcotic, noxious or other similar properties such that, in the event of spillage or leakage on an aircraft, extreme annoyance or discomfort could be caused to crew members so as to prevent the correct performance of assigned duties.

A37 This entry applies only to a material meeting the definition in § 171.8 of this subchapter for self-defense spray.

A51 For aircraft batteries, irrespective of the quantity limitations specified in Column (9A) of the § 172.101 Table or § 175.75(c), wet cell batteries, UN2794 or UN2795, up to a limit of 100 kg net mass per package may be transported aboard passenger aircraft. Transport in accordance with this special provision must be noted on the shipping paper.

a. Wet cell batteries, UN 2794 or UN 2795, up to a limit of 100kg net mass per package;

b. Lithium ion batteries, UN 3480, packages containing a single aircraft battery with a net mass not exceeding 35kg; and

c. Transport in accordance with this special provision must be noted on the shipping paper.

A53 Refrigerating machines and refrigerating machine components are not subject to the requirements of this subchapter when containing less than 12 kg (26.4 pounds) of a non-flammable gas or when containing 12 L (3 gallons) or less of ammonia solution (UN2672) (see § 173.307 of this subchapter).

A54 Irrespective of the quantity limits in Column 9B of the § 172.101 table, a lithium battery, including a lithium battery packed with, or contained in, equipment that otherwise meets the applicable requirements of § 173.185, may have a mass exceeding 35 kg if approved by the Associate Administrator prior to shipment.

A56 Radioactive material with a subsidiary hazard of Division 4.2, Packing Group I, must be transported in Type B packages when offered for transportation by aircraft. Where the subsidiary hazard material is “Forbidden” in column (9A) or (9B) of the § 172.101 Table, the radioactive material may only be offered for transportation and transported by aircraft under conditions approved by the Associate Administrator.

A60 Sterilization devices, when containing less than 30 mL per inner packaging with not more than 150 mL per outer packaging, may be transported in accordance with the provisions in § 173.4a, irrespective of § 173.4a(b), provided such packagings were first subjected to comparative fire testing. Comparative fire testing between a package as prepared for transport (including the substance to be transported) and an identical package filled with water must show that the maximum temperature measured inside the packages during testing does not differ by more than 200 [degrees] C (392 [degrees] F). Packagings may include a vent to permit the slow escape of gas (i.e. not more than 0.1 mL/hour per 30 mL inner packaging at 20 [degrees] C (68 [degrees] F) produced from gradual decomposition. The requirements of §§ 173.24(g)(1) and 173.27(c) do not apply.

A61

a. When used for purposes such as sterilization, inner packagings of peroxyacetic acid, stabilized, classified as UN 3107 Organic peroxide type E, liquid or UN 3109 Organic peroxide type F, liquid may be fitted with a vent consisting of hydrophobic membrane, provided:

(1) Each inner packaging contains not more than 70 mL;

(2) The inner packaging is designed so that the vent is not immersed in liquid in any orientation;

(3) Each inner packaging is enclosed in an intermediate rigid plastic packaging with a small opening to permit release of gas and contains a buffer that neutralizes the contents of the inner packaging in the event of leakage;

(4) Intermediate packagings are packed in a fiberboard box (4G) outer packaging;

(5) Each outer packaging contains not more than 1.4 L of liquid; and

(6) The rate of oxygen release from the outer packaging does not exceed 15 mL per hour.

b. Such packages must be transported on cargo aircraft only. The requirements of §§ 173.24(g)(1) and 173.27(c) do not apply.

A82 The quantity limits in columns (9A) and (9B) do not apply to human or animal body parts, whole organs or whole bodies known to contain or suspected of containing an infectious substance.

A100 Lithium ion cells and batteries must be offered for transport at a state of charge not exceeding 30 percent of their rated capacity. Lithium ion cells and batteries at a state of charge greater than 30 percent of their rated capacity may only be transported under conditions approved by the Associate Administrator in accordance with the requirements in 49 CFR part 107, subpart H. Guidance and methodology for determining the rated capacity can be found in sub-section 38.3.2.3 of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

A101 In addition to the applicable requirements of § 173.185, the quantity of lithium metal in the batteries contained in any piece of equipment must not exceed 12 g per cell and 500 g per battery.

A105

a. This entry applies to machinery or apparatus containing hazardous materials as a residue or as an integral element of the machinery or apparatus. It must not be used for machinery or apparatus for which a proper shipping name already exists in the § 172.101 Table.

b. Where the quantity of hazardous materials contained as an integral element in machinery or apparatus exceeds the limits permitted by § 173.222(c)(2), and the hazardous materials meet the provisions of § 173.222(c), the machinery or apparatus may be transported by aircraft only with the prior approval of the Associate Administrator.

a. 1 kg (2.2 pounds) in the case of solids;

b. 0.5 L (0.1 gallons) in the case of liquids;

c. 0.5 kg (1.1 pounds) in the case of Division 2.2 gases; or

d. any combination thereof.

A112 Notwithstanding the quantity limits shown in Column (9A) and (9B) for this entry, the following IBCs are authorized for transportation aboard passenger and cargo-only aircraft. Each IBC may not exceed a maximum net quantity of 1,000 kg:

a. Metal: 11A, 11B, 11N, 21A, 21B and 21N

b. Rigid plastics: 11H1, 11H2, 21H1 and 21H2

c. Composite with plastic inner receptacle: 11HZ1, 11HZ2, 21HZ1 and 21HZ2

d. Fiberboard: 11G

e. Wooden: 11C, 11D and 11F (with inner liners)

f. Flexible: 13H2, 13H3, 13H4, 13H5, 13L2, 13L3, 13L4, 13M1 and 13M2 (flexible IBCs must be sift-proof and water resistant or must be fitted with a sift-proof and water resistant liner).

A189 Except where the defining criteria of another class or division are met, concentrations of formaldehyde solution:

a. With less than 25 percent but not less than 10 percent formaldehyde, must be described as UN3334, Aviation regulated liquid, n.o.s.; and

b. With less than 10 percent formaldehyde, are not subject to this subchapter.

A191 Notwithstanding the Division 6.1 subsidiary risk for this description, the toxic subsidiary risk label and the requirement to indicate the subsidiary risk on the shipping paper are not required for manufactured articles containing less than 5 kg (11 pounds) of mercury.

A200 These articles must be transported as cargo and may not be carried aboard an aircraft by passengers or crewmembers in carry-on baggage, checked baggage, or on their person unless specifically authorized in § 175.10.

A210 This substance is forbidden for transport by air. It may be transported on cargo aircraft only with the prior approval of the Associate Administrator.

A212 “UN 2031, Nitric acid , other than red fuming, with more than 20% and less than 65% nitric acid” intended for use in sterilization devices only, may be transported on passenger aircraft irrespective of the indication of “forbidden” in columns (9A) of the § 172.101 table provided that:

a. Each inner packaging contains not more than 30 mL;

b. Each inner packaging is contained in a sealed leak-proof intermediate packaging with sufficient absorbent material capable of containing the contents of the inner packaging;

c. Intermediate packagings are securely packed in an outer packaging of a type permitted by § 173.158(g) of this subchapter which meet the requirements of part 178 of this subchapter at the Packing Group I performance level;

d. The maximum quantity of nitric acid in the package does not exceed 300 mL; and

e. Transport in accordance with this special provision must be noted on the shipping paper.

(3) “B” codes. These provisions apply only to bulk packagings. Except as otherwise provided in this subchapter, these special provisions do not apply to UN portable tanks or IBCs:

Code/Special Provisions

B1 If the material has a flash point at or above 38 [degrees]C (100 [degrees]F) and below 93 [degrees]C (200 [degrees]F), then the bulk packaging requirements of § 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 [degrees]C (100 [degrees]F), then the bulk packaging requirements of § 173.242 of this subchapter are applicable.

B2 MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.

B3 MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks and DOT 57 portable tanks are not authorized.

B4 MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.

B5 Only ammonium nitrate solutions with 35 percent or less water that will remain completely in solution under all conditions of transport at a maximum lading temperature of 116 [degrees]C (240 [degrees]F) are authorized for transport in the following bulk packagings: MC 307, MC 312, DOT 407 and DOT 412 cargo tanks with at least 172 kPa (25 psig) design pressure. The packaging shall be designed for a working temperature of at least 121 [degrees]C (250 [degrees]F). Only Specifications MC 304, MC 307 or DOT 407 cargo tank motor vehicles are authorized for transportation by vessel.

B6 Packagings shall be made of steel.

B7 Safety relief devices are not authorized on multi-unit tank car tanks. Openings for safety relief devices on multi-unit tank car tanks shall be plugged or blank flanged.

B8 Packagings shall be made of nickel, stainless steel, or steel with nickel, stainless steel, lead or other suitable corrosion resistant metallic lining.

B9 Bottom outlets are not authorized.

B10 MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks, and DOT 57 portable tanks are not authorized.

B11 Tank car tanks must have a test pressure of at least 2,068.5 kPa (300 psig). Cargo and portable tanks must have a design pressure of at least 1,207 kPa (175 psig).

B13 A nonspecification cargo tank motor vehicle authorized in § 173.247 of this subchapter must be at least equivalent in design and in construction to a DOT 406 cargo tank or MC 306 cargo tank (if constructed before August 31, 1995), except as follows:

a. Packagings equivalent to MC 306 cargo tanks are excepted from the certification, venting, and emergency flow requirements of the MC 306 specification.

b. Packagings equivalent to DOT 406 cargo tanks are excepted from §§ 178.345-7(d)(5), circumferential reinforcements; 178.345-10, pressure relief; 178.345-11, outlets; 178.345-14, marking, and 178.345-15, certification.

c. Packagings are excepted from the design stress limits at elevated temperatures, as described in Section VIII of the ASME Code (IBR, see § 171.7 of this subchapter). However, the design stress limits may not exceed 25 percent of the stress for 0 temper at the maximum design temperature of the cargo tank, as specified in the Aluminum Association's "Aluminum Standards and Data" (IBR, see § 171.7 of this subchapter).

B14 Each bulk packaging, except a tank car or a multi-unit-tank car tank, must be insulated with an insulating material so that the overall thermal conductance at 15.5 [degrees]C (60[degrees]F) is no more than 1.5333 kilojoules per hour per square meter per degree Celsius (0.075 Btu per hour per square foot per degree Fahrenheit) temperature differential. Insulating materials must not promote corrosion to steel when wet.

B15 Packagings must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance.

B16 The lading must be completely covered with nitrogen, inert gas or other inert materials.

B18 Open steel hoppers or bins are authorized.

B23 Tanks must be made of steel that is rubber lined or unlined. Unlined tanks must be passivated before being placed in service. If unlined tanks are washed out with water, they must be repassivated prior to return to service. Lading in unlined tanks must be inhibited so that the corrosive effect on steel is not greater than that of hydrofluoric acid of 65 percent concentration.

B25 Packagings must be made from monel or nickel or monel-lined or nickel-lined steel.

B26 Tanks must be insulated. Insulation must be at least 100 mm (3.9 inches) except that the insulation thickness may be reduced to 51 mm (2 inches) over the exterior heater coils. Interior heating coils are not authorized. The packaging may not be loaded with a material outside of the packaging's design temperature range. In addition, the material also must be covered with an inert gas or the container must be filled with water to the tank's capacity. After unloading, the residual material also must be covered with an inert gas or the container must be filled with water to the tank's capacity.

B27 Tanks must have a service pressure of 1,034 kPa (150 psig). Tank car tanks must have a test pressure rating of 1,379 kPa (200 psig). Lading must be blanketed at all times with a dry inert gas at a pressure not to exceed 103 kPa (15 psig).

B28 Packagings must be made of stainless steel.

B30 MC 312, MC 330, MC 331 and DOT 412 cargo tanks and DOT 51 portable tanks must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of § 173.24b(b) of this subchapter. Thickness of stainless steel for tank shell and heads for cargo tanks and portable tanks must be the greater of 7.62 mm (0.300 inch) or the thickness required for a tank with a design pressure at least equal to 1.5 times the vapor pressure of the lading at 46 [degrees]C (115 [degrees]F). In addition, MC 312 and DOT 412 cargo tank motor vehicles must:

a. Be ASME Code (U) stamped for 100% radiography of all pressure-retaining welds;

b. Have accident damage protection which conforms with § 178.345-8 of this subchapter;

c. Have a MAWP or design pressure of at least 87 psig; and

d. Have a bolted manway cover.

B32 MC 312, MC 330, MC 331, DOT 412 cargo tanks and DOT 51 portable tanks must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of § 173.24b(b) of this subchapter. Thickness of stainless steel for tank shell and heads for cargo tanks and portable tanks must be the greater of 6.35 mm (0.250 inch) or the thickness required for a tank with a design pressure at least equal to 1.3 times the vapor pressure of the lading at 46 [degrees]C (115 [degrees]F). In addition, MC 312 and DOT 412 cargo tank motor vehicles must:

a. Be ASME Code (U) stamped for 100% radiography of all pressure-retaining welds;

b. Have accident damage protection which conforms with § 178.345-8 of this subchapter;

c. Have MAWP or design pressure of at least 87 psig; and

d. Have a bolted manway cover.

B33 MC 300, MC 301, MC 302, MC 303, MC 305, MC 306, and DOT 406 cargo tanks equipped with a 1 psig normal vent used to transport gasoline must conform to Table I of this Special Provision. Based on the volatility class determined by using ASTM D 439 and the Reid vapor pressure (RVP) of the particular gasoline, the maximum lading pressure and maximum ambient temperature permitted during the loading of gasoline may not exceed that listed in Table I.

TABLE I — MAXIMUM AMBIENT TEMPERATURE — GASOLINE

ASTM D439 volatility class	**Maximum lading and ambient temperature (see note 1)**
A (RVP <= 9.0 psia)	131°F
B (RVP <= 10.0 psia)	124°F
C (RVP <= 11.5 psia)	116°F
D (RVP <= 13.5 psia)	107°F
E (RVP <= 15.0 psia)	100°F

Note 1: Based on maximum lading pressure of 1 psig at top of cargo tank.

B35 Tank cars containing hydrogen cyanide may be alternatively marked “Hydrocyanic acid, liquefied” if otherwise conforming to marking requirements in subpart D of this part. Tank cars marked “HYDROCYANIC ACID” prior to October 1, 1991 do not need to be remarked.

B42 Tank cars constructed before March 16, 2009, must have a test pressure of 34.47 Bar (500 psig) or greater and conform to Class 105J. Each tank car must have a reclosing pressure relief device

having a start-to-discharge pressure of 10.34 Bar (150 psig). The tank car specification may be marked to indicate a test pressure of 13.79 Bar (200 psig).

B44 All parts of valves and safety relief devices in contact with lading must be of a material which will not cause formation of acetylides.

B45 Each tank must have a reclosing combination pressure relief device equipped with stainless steel or platinum rupture discs approved by the AAR Tank Car Committee.

B46 The detachable protective housing for the loading and unloading valves of multi-unit tank car tanks must withstand tank test pressure and must be approved by the Associate Administrator.

B47 Each tank may have a reclosing pressure relief device having a start-to-discharge pressure setting of 310 kPa (45 psig).

B48 Portable tanks in sodium metal service may be visually inspected at least once every 5 years instead of being retested hydrostatically. Date of the visual inspection must be stenciled on the tank near the other required markings.

B49 Tanks equipped with interior heater coils are not authorized. Single unit tank car tanks must have a reclosing pressure relief device having a start-to-discharge pressure set at no more than 1551 kPa (225 psig).

B52 Notwithstanding the provisions of § 173.24b of this subchapter, non-reclosing pressure relief devices are authorized on DOT 57 portable tanks.

B53 Packagings must be made of either aluminum or steel.

B54 Open-top, sift-proof rail cars are also authorized.

B55 Water-tight, sift-proof, closed-top, metal-covered hopper cars, equipped with a venting arrangement (including flame arrestors) approved by the Associate Administrator are also authorized.

B56 Water-tight, sift-proof, closed-top, metal-covered hopper cars are also authorized if the particle size of the hazardous material is not less than 149 microns.

B57 Class 115A tank car tanks used to transport chloroprene must be equipped with a non-reclosing pressure relief device of a diameter not less than 305 mm (12 inches) with a maximum rupture disc burst pressure of 310 kPa (45 psig).

B59 Water-tight, sift-proof, closed-top, metal-covered hopper cars are also authorized provided that the lading is covered with a nitrogen blanket.

B61 Written procedures covering details of tank car appurtenances, dome fittings, safety devices, and marking, loading, handling, inspection, and testing practices must be approved by the Associate Administrator before any single unit tank car tank is offered for transportation.

B65 Tank cars constructed before March 16, 2009, must have a test pressure of 34.47 Bar (500 psig) or greater and conform to Class 105A. Each tank car must have a reclosing pressure relief device having a start-to-discharge pressure of 15.51 Bar (225 psig). The tank car specification may be marked to indicate a test pressure of 20.68 Bar (300 psig).

B66 Each tank must be equipped with gas tight valve protection caps. Outage must be sufficient to prevent tanks from becoming liquid full at 55 [degrees]C (130 [degrees]F). Specification 110A500W tanks must be stainless steel.

B67 All valves and fittings must be protected by a securely attached cover made of metal not subject to deterioration by the lading, and all valve openings, except safety valve, must be fitted with screw plugs or caps to prevent leakage in the event of valve failure.

B68 Sodium must be in a molten condition when loaded and allowed to solidify before shipment. Outage must be at least 5 percent at 98 [degrees]C (208 [degrees]F). Bulk packagings must have

exterior heating coils fusion welded to the tank shell which have been properly stress relieved. The only tank car tanks authorized are Class DOT 105 tank cars having a test pressure of 2,069 kPa (300 psig) or greater.

B69 Dry sodium cyanide or potassium cyanide may be shipped in the following sift-proof and weather-resistant packagings: metal covered hopper cars, covered motor vehicles, portable tanks, or non-specification bins.

B70 If DOT 103ANW tank car tank is used: All cast metal in contact with the lading must have 96.7 percent nickel content; and the lading must be anhydrous and free from any impurities.

B76 Tank cars constructed before March 16, 2009, must have a test pressure of 20.68 Bar (300 psig) or greater and conform to Class 105S, 112J, 114J or 120S. Each tank car must have a reclosing pressure relief device having a start-to-discharge pressure of 10.34 Bar (150 psig). The tank car specification may be marked to indicate a test pressure of 13.79 Bar (200 psig).

B77 Other packaging are authorized when approved by the Associate Administrator.

B78 Tank cars must have a test pressure of 4.14 Bar (60 psig) or greater and conform to Class 103, 104, 105, 109, 111, 112, 114 or 120. Heater pipes must be of welded construction designed for a test pressure of 500 pounds per square inch. A 25 mm (1 inch) woven lining of asbestos or other approved material must be placed between the bolster slabbing and the bottom of the tank. If a tank car tank is equipped with a non-reclosing pressure relief device, the rupture disc must be perforated with a 3.2 mm (0.13 inch) diameter hole. If a tank car tank is equipped with a reclosing pressure relief valve, the tank must also be equipped with a vacuum relief valve.

B80 Each cargo tank must have a minimum design pressure of 276 kPa (40 psig).

B81 Venting and pressure relief devices for tank car tanks and cargo tanks must be approved by the Associate Administrator.

B82 Cargo tanks and portable tanks are not authorized.

B83 Bottom outlets are prohibited on tank car tanks transporting sulfuric acid in concentrations over 65.25 percent.

B84 Packagings must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance for sulfuric acid or spent sulfuric acid in concentration up to 65.25 percent.

B85 Cargo tanks must be marked with the name of the lading in accordance with the requirements of § 172.302(b).

B90 Steel tanks conforming or equivalent to ASME specifications which contain solid or semisolid residual motor fuel antiknock mixture (including rust, scale, or other contaminants) may be shipped by rail freight or highway. The tank must have been designed and constructed to be capable of withstanding full vacuum. All openings must be closed with gasketed blank flanges or vapor tight threaded closures.

B115 Rail cars, highway trailers, roll-on/roll-off bins, or other non-specification bulk packagings are authorized. Packagings must be sift-proof, prevent liquid water from reaching the hazardous material, and be provided with sufficient venting to preclude dangerous accumulation of flammable, corrosive, or toxic gaseous emissions such as methane, hydrogen, and ammonia. The material must be loaded dry.

B116 The use of non specification, sift-proof dump or hopper type vehicles, and sift-proof roll-on/roll-off bulk bins, which must be covered by a tarpaulin, metal cover, or equivalent means is authorized for the transportation of spent bleaching earth by motor vehicle. The material is also be subject to operational controls which include not exceeding a temperature of 55C (130F) at the time it is offered or during transportation, not exceeding a transportation time of 24 hours, and drivers transporting spent bleaching earth must be trained in the properties and hazards of the spent bleaching earth. This training must be documented in training records required by § 172.704(d).

B120 The use of flexible bulk containers conforming to the requirements in subpart R and subpart S of part 178 of this subchapter is permitted.

B130 When transported by motor vehicle, used diatomaceous earth filter material is not subject to any other requirements of this subchapter except for the shipping paper requirements of subpart C of part 172 of this subchapter; emergency response information as required by § 172.602(a)(2) through (a)(7) of this subchapter; and the marking requirements of § 172.302 of this subchapter, if the following requirements are met:

a. Packagings are non-DOT specification sift-proof motor vehicles or sift-proof roll-on/roll-off bulk bins, which are covered by a tarpaulin or other equivalent means.

b. The temperature of the material at the time it is offered for transport and during transportation may not exceed 55 [degrees] C (130 [degrees] F).

c. The time between offering the material for transportation at the point of origin, and unloading the material at the destination does not exceed 48 hours.

d. In addition to the training requirements prescribed in §§ 172.700 through 172.704, each driver must be trained regarding the properties and hazards of diatomaceous earth filter material, precautions to ensure safe transport of the material, and actions to be taken in the event of an emergency during transportation, or a substantial delay in transit.

B131 When transported by highway, rail, or cargo vessel, waste Paint and Paint related material (UN1263; PG II and PG III), when in plastic or metal inner packagings of not more than 26.5 L (7 gallons), are excepted from the marking requirements in § 172.301(a) and (c) and the labeling requirements in § 172.400(a), when further packed in the following specification and nonspecification bulk outer packagings and under the following conditions:

a. Primary receptacles must conform to the general packaging requirements of subpart B of part 173 of this subchapter and may not leak. If they do leak, they must be overpacked in packagings conforming to the specification requirements of part 178 of this subchapter or in salvage packagings conforming to the requirements in § 173.12 of this subchapter.

b. Primary receptacles must be further packed in non-specification bulk outer packagings such as cubic yard boxes, plastic rigid-wall bulk containers, dump trailers, and roll-off containers. Bulk outer packagings must be liquid tight through design or by the use of lining materials.

c. Primary receptacles may also be further packed in specification bulk outer packagings. Authorized specification bulk outer packagings are UN11G fiberboard intermediate bulk containers (IBC) and UN13H4 woven plastic, coated and with liner flexible intermediate bulk containers (FIBCs) meeting the Packing Group II performance level and lined with a plastic liner of at least 6 mil thickness.

d. All inner packagings placed inside bulk outer packagings must be blocked and braced to prevent shifting during transportation that could cause the container to open or fall over. Specification IBCs and FIBCs are to be secured to a pallet.

B132 Except for transportation by aircraft, UN2813, Water reactive solid, n.o.s. (contains magnesium, magnesium nitrides) in PG II or III may be packaged in sift-proof bulk packagings that prevent liquid from reaching the hazardous material with sufficient venting to preclude dangerous accumulation of flammable, corrosive or toxic gaseous emissions such as methane, hydrogen and ammonia.

B133 Hydrochloric acid concentration not exceeding 38%, in Packing Group II, is authorized to be packaged in UN31H1 or UN31HH1 intermediate bulk containers when loaded in accordance with the requirements of § 173.35(h) of this subchapter.

B134 For Large Packagings offered for transport by vessel, flexible or fibre inner packagings shall be sift-proof and water-resistant or shall be fitted with a sift-proof and water-resistant liner.

B135 For Large Packagings offered for transport by vessel, flexible or fibre inner packagings shall be hermetically sealed.

B136 Non-specification closed bulk bins are authorized.

(4) IB Codes and IP Codes. These provisions apply only to transportation in IBCs and Large Packagings. Table 1 authorizes IBCs for specific proper shipping names through the use of IB Codes assigned in the § 172.101 table of this subchapter. Table 2 defines IP Codes on the use of IBCs that are assigned to specific commodities in the § 172.101 Table of this subchapter. Table 3 authorizes Large Packagings for specific proper shipping names through the use of IB Codes assigned in the § 172.101 table of this subchapter. Large Packagings are authorized for the Packing Group III entries of specific proper shipping names when either special provision IB3 or IB8 is assigned to that entry in the § 172.101 Table. When no IB code is assigned in the § 172.101 Table for a specific proper shipping name, or in § 173.185 or § 173.225(e) Organic Peroxide Table for Type F organic peroxides, use of an IBC or Large Packaging for the material may be authorized when approved by the Associate Administrator. The letter “Z” shown in the marking code for composite IBCs must be replaced with a capital code letter designation found in § 178.702(a)(2) of this subchapter to specify the material used for the other packaging. Tables 1, 2, and 3 follow:

Table 1—IB Codes (IBC Codes)

IBC code	Authorized IBCs
IB1	Authorized IBCs: Metal (31A, 31B and 31N). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50° C (1.1 bar at 122° F), or 130 kPa at 55° C (1.3 bar at 131° F) are authorized.
IB2	Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50° C (1.1 bar at 122° F), or 130 kPa at 55° C (1.3 bar at 131° F) are authorized.
IB3	Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50° C (1.1 bar at 122° F), or 130 kPa at 55° C (1.3 bar at 131° F) are authorized, except for UN2672 (also see special provision IP8 in Table 2 for UN2672).
IB4	Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N).
IB5	Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A,

Table 1—IB Codes (IBC Codes)

IBC code	Authorized IBCs
	31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 21HZ1 and 31HZ1).
IB6	Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2 and 31HZ1). Additional Requirement: Composite IBCs 11HZ2 and 21HZ2 may not be used when the hazardous materials being transported may become liquid during transport.
IB7	Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2 and 31HZ1); Wooden (11C, 11D and 11F). Additional Requirement: Liners of wooden IBCs must be sift-proof.
IB8	Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2 and 31HZ1); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).
IB9	IBCs are only authorized if approved by the Associate Administrator.

Table 2—IP Codes

IP code	
IP1	IBCs must be packed in closed freight containers or a closed transport vehicle.
IP2	When IBCs other than metal or rigid plastics IBCs are used, they must be offered for transportation in a closed freight container or a closed transport vehicle.
IP3	Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant

Table 2—IP Codes

IP code	
	liner.
IP4	Flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner.
IP5	IBCs must have a device to allow venting. The inlet to the venting device must be located in the vapor space of the IBC under maximum filling conditions.
IP6	Non-specification bulk bins are authorized.
IP7	For UN identification numbers 1327, 1363, 1364, 1365, 1386, 1408, 1841, 2211, 2217, 2793 and 3314, IBCs are not required to meet the IBC performance tests specified in part 178, subpart N, of this subchapter.
IP8	Ammonia solutions may be transported in rigid or composite plastic IBCs (31H1, 31H2 and 31HZ1) that have successfully passed, without leakage or permanent deformation, the hydrostatic test specified in § 178.814 of this subchapter at a test pressure that is not less than 1.5 times the vapor pressure of the contents at 55° C (131° F).
IP13	Transportation by vessel in IBCs is prohibited.
IP14	Air must be eliminated from the vapor space by nitrogen or other means.
IP15	For UN2031 with more than 55% nitric acid, rigid plastic IBCs and composite IBCs with a rigid plastic inner receptacle are authorized for two years from the date of IBC manufacture.
IP16	IBCs of type 31A and 31N are only authorized if approved by the Associate Administrator.
IP19	For UN identification numbers 3531, 3532, 3533, and 3534, IBCs must be designed and constructed to permit the release of gas or vapor to prevent a build-up of pressure that could rupture the IBCs in the event of loss of stabilization.

Table 2—IP Codes

IP code	
IP20	Dry sodium cyanide or potassium cyanide is also permitted in siftproof, water-resistant, fiberboard IBCs when transported in closed freight containers or transport vehicles.
IP21	When transported by vessel, flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner.

Table 3—IB CODES

[Large packaging authorizations]

IB3	Authorized Large Packagings (LIQUIDS) (PG III materials only) [2]
Inner packagings:	Large outer packagings:
Glass 10 liter	steel (50A).
Plastics 30 liter	aluminum (50B).
Metal 40 liter	metal other than steel or aluminum (50N).
	rigid plastics (50H)
	natural wood (50C).
	plywood (50D)
	reconstituted wood (50F)
	rigid fiberboard (50G).

IB8	Authorized Large Packagings (SOLIDS) (PG III materials only) [2]
Inner packagings:	Large outer packagings:
Glass 10 kg	steel (50A).

[2] Except when authorized under Special Provision 41.

[2] Except when authorized under Special Provision 41.

Table 3—IB CODES

[Large packaging authorizations]

Plastics 50 kg	aluminum (50B).
Metal 50 kg	metal other than steel or aluminum (50N).
Paper 50 kg	flexible plastics (51H). [1]
Fiber 50 kg	rigid plastics (50H)
	natural wood (50C).
	plywood (50D)
	reconstituted wood (50F)
	rigid fiberboard (50G).

(5) “N” codes. These provisions apply only to non-bulk packagings:

Code/Special Provisions

N3 Glass inner packagings are permitted in combination or composite packagings only if the hazardous material is free from hydrofluoric acid.

N4 For combination or composite packagings, glass inner packagings, other than ampoules, are not permitted.

N5 Glass materials of construction are not authorized for any part of a packaging which is normally in contact with the hazardous material.

N6 Battery fluid packaged with electric storage batteries, wet or dry, must conform to the packaging provisions of § 173.159 (g) or (h) of this subchapter.

N7 The hazard class or division number of the material must be marked on the package in accordance with § 172.302 of this subchapter. However, the hazard label corresponding to the hazard class or division may be substituted for the marking.

N8 Nitroglycerin solution in alcohol may be transported under this entry only when the solution is packed in metal cans of not more than 1 L capacity each, overpacked in a wooden box containing not more than 5 L. Metal cans must be completely surrounded with absorbent cushioning material. Wooden boxes must be completely lined with a suitable material impervious to water and nitroglycerin.

N11 This material is excepted for the specification packaging requirements of this subchapter if the material is packaged in strong, tight non-bulk packaging meeting the requirements of subparts A and B of part 173 of this subchapter.

N12 Plastic packagings are not authorized.

N20 A 5M1 multi-wall paper bag is authorized if transported in a closed transport vehicle.

N25 Steel single packagings are not authorized.

N32 Aluminum materials of construction are not authorized for single packagings.

N33 Aluminum drums are not authorized.

N34 Aluminum construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.

[1] Flexible plastic (51H) Large Packagings are only authorized for use with flexible inner packagings.

N36 Aluminum or aluminum alloy construction materials are permitted only for halogenated hydrocarbons that will not react with aluminum.

N37 This material may be shipped in an integrally-lined fiber drum (1G) which meets the general packaging requirements of subpart B of part 173 of this subchapter, the requirements of part 178 of this subchapter at the packing group assigned for the material and to any other special provisions of column 7 of the § 1.A172.101 table.

N40 This material is not authorized in the following packagings:

a. A combination packaging consisting of a 4G fiberboard box with inner receptacies of glass or earthenware;

b. A single packaging of a 4C2 sift-proof, natural wood box; or

c. A composite packaging 6PG2 (glass, porcelain or stoneware receptacles within a fiberboard box).

N41 Metal construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.

N42 1A1 drums made of carbon steel with thickness of body and heads of not less than 1.3 mm (0.050 inch) and with a corrosion-resistant phenolic lining are authorized for stabilized benzyl chloride if tested and certified to the Packing Group I performance level at a specific gravity of not less than 1.8.

N43 Metal drums are permitted as single packagings only if constructed of nickel or monel.

N45 Copper cartridges are authorized as inner packagings if the hazardous material is not in dispersion.

N65 Outage must be sufficient to prevent cylinders or spheres from becoming liquid full at 55 [degrees]C (130 [degrees]F). The vacant space (outage) may be charged with a nonflammable nonliquefied compressed gas if the pressure in the cylinder or sphere at 55 [degrees]C (130 [degrees]F) does not exceed 125 percent of the marked service pressure.

N73 Packagings consisting of outer wooden or fiberboard boxes with inner glass, metal or other strong containers; metal or fiber drums; kegs or barrels; or strong metal cans are authorized and need not conform to the requirements of part 178 of this subchapter.

N74 Packages consisting of tightly closed inner containers of glass, earthenware, metal or polyethylene, capacity not over 0.5 kg (1.1 pounds) securely cushioned and packed in outer wooden barrels or wooden or fiberboard boxes, not over 15 kg (33 pounds) net weight, are authorized and need not conform to the requirements of part 178 of this subchapter.

N75 Packages consisting of tightly closed inner packagings of glass, earthenware or metal, securely cushioned and packed in outer wooden barrels or wooden or fiberboard boxes, capacity not over 2.5 kg (5.5 pounds) net weight, are authorized and need not conform to the requirements of part 178 of this subchapter.

N76 For materials of not more than 25 percent active ingredient by weight, packages consisting of inner metal packagings not greater than 250 mL (8 ounces) capacity each, packed in strong outer packagings together with sufficient absorbent material to completely absorb the liquid contents are authorized and need not conform to the requirements of part 178 of this subchapter.

N77 For materials of not more than two percent active ingredients by weight, packagings need not conform to the requirements of part 178 of this subchapter, if liquid contents are absorbed in an inert material.

N78 Packages consisting of inner glass, earthenware, or polyethylene or other nonfragile plastic bottles or jars not over 0.5 kg (1.1 pounds) capacity each, or metal cans not over five pounds capacity each, packed in outer wooden boxes, barrels or kegs, or fiberboard boxes are authorized and need not

conform to the requirements of part 178 of this subchapter. Net weight of contents in fiberboard boxes may not exceed 29 kg (64 pounds). Net weight of contents in wooden boxes, barrels or kegs may not exceed 45 kg (99 pounds).

N79 Packages consisting of tightly closed metal inner packagings not over 0.5 kg (1.1 pounds) capacity each, packed in outer wooden or fiberboard boxes, or wooden barrels, are authorized and need not conform to the requirements of part 178 of this subchapter. Net weight of contents may not exceed 15 kg (33 pounds).

N80 Packages consisting of one inner metal can, not over 2.5 kg (5.5 pounds) capacity, packed in an outer wooden or fiberboard box, or a wooden barrel, are authorized and need not conform to the requirements of part 178 of this subchapter.

N82 See § 173.115 of this subchapter for classification criteria for flammable aerosols.

N83 This material may not be transported in quantities of more than 11.5 kg (25.4 lbs) per package.

N84 The maximum quantity per package is 500 g (1.1 lbs.).

N85 Packagings certified at the Packing Group I performance level may not be used.

N86 UN pressure receptacles made of aluminum alloy are not authorized.

N87 The use of copper valves on UN pressure receptacles is prohibited.

N88 Any metal part of a UN pressure receptacle in contact with the contents may not contain more than 65% copper, with a tolerance of 1%.

N89 When steel UN pressure receptacles are used, only those bearing the “H” mark are authorized.

N90 Metal packagings are not authorized. Packagings of other material with a small amount of metal, for example metal closures or other metal fittings such as those mentioned in part 178 of this subchapter, are not considered metal packagings. Packagings of other material constructed with a small amount of metal must be designed such that the hazardous material does not contact the metal.

N91 The use of a non specification sift-proof, non-bulk, metal can with or without lid, or a non specification sift-proof, non-bulk fiber drum, with or without lid is authorized when transporting coal tar pitch compounds by motor vehicle or rail freight. The fiber drum must to be fabricated with a three ply wall, as a minimum. The coal tar pitch compound must be in a solid mass during transportation.

N92 Notwithstanding the provisions of § 173.24(g) of this subchapter, packagings shall be designed and constructed to permit the release of gas or vapor to prevent a build-up of pressure that could rupture the packagings in the event of loss of stabilization.

N95 UN1075, Liquefied petroleum gas and UN1978, Propane authorized for transport in DOT 4BA240 cylinders is not subject to the UN identification number and proper shipping name marking or the label requirements of this part subject to the following conditions:

a. The cylinder must be transported in a closed motor vehicle displaying FLAMMABLE GAS placards in accordance with subpart F of part 172 of this subchapter.

b. Shipping papers at all times must reflect a correct current accounting of all cylinders both full and expended.

c. The cylinders are collected and transported by a private or a contract carrier for reconditioning, reuse or disposal.

(6) “R” codes. These provisions apply only to transportation by rail.

R1 A person who offers for transportation tank cars containing sulfur, molten or residue of sulfur, molten may reference the Sulfur Institute’s, “Molten Sulphur Rail Tank Car Guidance document” (see § 171.7 of this subchapter) to identify tank cars that may pose a risk in transportation due to the accumulation of formed, solid sulfur on the outside of the tank.

(7) "T" codes.

(i) These provisions apply to the transportation of hazardous materials in UN portable tanks. Portable tank instructions specify the requirements applicable to a portable tank when used for the transportation of a specific hazardous material. These requirements must be met in addition to the design and construction specifications in part 178 of this subchapter. Portable tank instructions T1 through T22 specify the applicable minimum test pressure, the minimum shell thickness (in reference steel), bottom opening requirements and pressure relief requirements. Liquefied compressed gases are assigned to portable tank instruction T50. Refrigerated liquefied gases that are authorized to be transported in portable tanks are specified in tank instruction T75.

(ii) The following table specifies the portable tank requirements applicable to "T" Codes T1 through T22. Column 1 specifies the "T" Code. Column 2 specifies the minimum test pressure, in bar (1 bar = 14.5 psig), at which the periodic hydrostatic testing required by § 180.605 of this subchapter must be conducted. Column 3 specifies the section reference for minimum shell thickness or, alternatively, the minimum shell thickness value. Column 4 specifies the applicability of § 178.275(g)(3) of this subchapter for the pressure relief devices. When the word "Normal" is indicated, § 178.275(g)(3) of this subchapter does not apply. Column 5 references applicable requirements for bottom openings in part 178 of this subchapter. "Prohibited" means bottom openings are prohibited, and "Prohibited for liquids" means bottom openings are authorized for solid material only. The table follows:

Table of Portable Tank T Codes T1-T22

[Portable tank codes T1-T22 apply to liquid and

solid hazardous materials of Classes 3 through 9 which are transported in portable tanks.]

Portable tank instruction (1)	Minimum test pressure (bar) (2)	Minimum shell thickness (in mm-reference steel) (See § 178.274(d)) (3)	Pressure-relief requirements (See § 178.275(g)) (4)	Bottom opening requirements (See § 178.275(d)) (5)
T1	1.5	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(2)
T2	1.5	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(3)
T3	2.65	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(2)
T4	2.65	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(3)

T5	2.65	§ 178.274 (d)(2)	§ 178.275 (g)(3)	Prohibited
T6	4	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(2)
T7	4	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(3)
T8	4	§ 178.274 (d)(2)	Normal	Prohibited
T9	4	6 mm	Normal	Prohibited for liquids.
T10	4	6 mm	§ 178.275 (g)(3)	Prohibited
T11	6	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(3)
T12	6	§ 178.274 (d)(2)	§ 178.275 (g)(3)	§ 178.275 (d)(3)
T13	6	6 mm	Normal	Prohibited
T14	6	6 mm	§ 178.275 (g)(3)	Prohibited
T15	10	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(3)
T16	10	§ 178.274 (d)(2)	§ 178.275 (g)(3)	§ 178.275 (d)(3)
T17	10	6 mm	Normal	§ 178.275 (d)(3)
T18	10	6 mm	§ 178.275 (g)(3)	§ 178.275 (d)(3)
T19	10	6 mm	§ 178.275 (g)(3)	Prohibited
T20	10	8 mm	§ 178.275 (g)(3)	Prohibited
T21	10	10 mm	Normal	Prohibited for liquids. § 178.275(d)(2)
T22	10	10 mm	§ 178.275	Prohibited

(iii) T50 When portable tank instruction T50 is indicated in Column (7) of the § 172.101 Hazardous Materials Table, the applicable liquefied compressed gas and chemical under pressure descriptions are authorized to be transported in portable tanks in accordance with the requirements of § 173.313 of this subchapter.

(iv)

T75. When portable tank instruction T75 is referenced in Column (7) of the § 172.101 Table, the applicable refrigerated liquefied gases are authorized to be transported in portable tanks in accordance with the requirements of § 178.277 of this subchapter.

(v) UN and IM portable tank codes/special provisions. When a specific portable tank instruction is specified by a "T" Code in Column (7) of the § 172.101 Table for a specific hazardous material, a specification portable tank conforming to an alternative tank instruction may be used if:

(A) The alternative portable tank has a higher or equivalent test pressure (for example, 4 bar when 2.65 bar is specified);

(B) The alternative portable tank has greater or equivalent wall thickness (for example, 10 mm when 6 mm is specified);

(C) The alternative portable tank has a pressure relief device as specified in the "T" Code. If a frangible disc is required in series with the reclosing pressure relief device for the specified portable tank, the alternative portable tank must be fitted with a frangible disc in series with the reclosing pressure relief device; and

(D) With regard to bottom openings —

(1) When two effective means are specified, the alternative portable tank is fitted with bottom openings having two or three effective means of closure or no bottom openings; or

(2) When three effective means are specified, the portable tank has no bottom openings or three effective means of closure; or

(3) When no bottom openings are authorized, the alternative portable tank must not have bottom openings.

(vi) Except when an organic peroxide is authorized under § 173.225(g), if a hazardous material is not assigned a portable tank "T" Code, the hazardous material may not be transported in a portable tank unless approved by the Associate Administrator.

(8) "TP" codes.

(i) These provisions apply to the transportation of hazardous materials in IM and UN Specification portable tanks. Portable tank special provisions are assigned to certain hazardous materials to specify requirements that are in addition to those provided by the portable tank instructions or the requirements in part 178 of this subchapter. Portable tank special provisions are designated with the abbreviation TP (tank provision) and are assigned to specific hazardous materials in Column (7) of the § 172.101 Table.

(ii) The following is a list of the portable tank special provisions:

Code/Special Provisions

TP1 The maximum degree of filling must not exceed the degree of filling determined by the following:

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Where:

t[r] is the maximum mean bulk temperature during transport, and t[f] is the temperature in degrees celsius of the liquid during filling.

TP2

a. The maximum degree of filling must not exceed the degree of filling determined by the following:

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Where:

t[r] is the maximum mean bulk temperature during transport,

t[f] is the temperature in degrees celsius of the liquid during filling, and

[alpha] is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (t[f]) and the maximum mean bulk temperature during transportation (t[r]) both in degrees celsius.

b. For liquids transported under ambient conditions [alpha] may be calculated using the formula:

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Where:

d[15] and d[50] are the densities (in units of mass per unit volume) of the liquid at 15 [degrees] C (59 [degrees] F) and 50 [degrees] C (122 [degrees] F), respectively.

TP3 The maximum degree of filling (in %) for solids transported above their melting points and for elevated temperature liquids shall be determined by the following:

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Where: d[f] and d[r] are the mean densities of the liquid at the mean temperature of the liquid during filling and the maximum mean bulk temperature during transport respectively.

TP4 The maximum degree of filling for portable tanks must not exceed 90%.

TP5 For a portable tank used for the transport of flammable refrigerated liquefied gases or refrigerated liquefied oxygen, the maximum rate at which the portable tank may be filled must not exceed the liquid flow capacity of the primary pressure relief system rated at a pressure not exceeding 120 percent of the portable tank’s design pressure. For portable tanks used for the transport of refrigerated liquefied helium and refrigerated liquefied atmospheric gas (except oxygen), the maximum rate at which the tank is filled must not exceed the liquid flow capacity of the pressure relief device rated at 130 percent of the portable tank’s design pressure. Except for a portable tank containing refrigerated liquefied helium, a portable tank shall have an outage of at least two percent below the inlet of the pressure relief device or pressure control valve, under conditions of incipient opening, with the portable tank in a level attitude. No outage is required for helium.

TP6 The tank must be equipped with a pressure release device which prevent a tank from bursting under fire engulfment conditions (the conditions prescribed in CGA pamphlet S-1.2 (see § 171.7 of this subchapter) or alternative conditions approved by the Associate Administrator may be used to consider the fire engulfment condition), taking into account the properties of the hazardous material to be transported.

TP7 The vapor space must be purged of air by nitrogen or other means.

TP8 A portable tank having a minimum test pressure of 1.5 bar (150 kPa) may be used when the flash point of the hazardous material transported is greater than 0 [degrees] C (32 [degrees] F).

TP9 A hazardous material assigned to special provision TP9 in Column (7) of the § 172.101 Table may only be transported in a portable tank if approved by the Associate Administrator.

TP10 A lead lining, not less than 5 mm thick, which shall be tested annually, or another suitable lining material approved by the competent authority, is required. A portable tank may be offered for transport after the date of expiry of the last lining inspection for a period not to exceed three months for purposes of performing the next required test or inspection, after emptying but before cleaning.

TP13 Self-contained breathing apparatus must be provided when this hazardous material is transported by sea.

TP16 The portable tank must be protected against over and under pressurization which may be experienced during transportation. The means of protection must be approved by the approval agency designated to approve the portable tank in accordance with the procedures in part 107, subpart E, of this subchapter. The pressure relief device must be preceded by a frangible disk in accordance with the requirements in § 178.275(g)(3) of this subchapter to prevent crystallization of the product in the pressure relief device.

TP17 Only inorganic non-combustible materials may be used for thermal insulation of the tank.

TP18 The temperature of this material must be maintained between 18 [degrees] C (64.4 [degrees] F) and 40 [degrees] C (104 [degrees] F) while in transportation. Portable tanks containing solidified methacrylic acid must not be reheated during transportation.

TP19 The calculated wall thickness must be increased by 3 mm at the time of construction. Wall thickness must be verified ultrasonically at intervals midway between periodic hydraulic tests (every 2.5 years). The portable tank must not be used if the wall thickness is less than that prescribed by the applicable T code in Column (7) of the Table for this material.

TP20 This hazardous material must only be transported in insulated tanks under a nitrogen blanket.

TP21 The wall thickness must not be less than 8 mm. Portable tanks must be hydraulically tested and internally inspected at intervals not exceeding 2.5 years.

TP22 Lubricants for portable tank fittings (for example, gaskets, shut-off valves, flanges) must be oxygen compatible.

TP24 The portable tank may be fitted with a device to prevent the build up of excess pressure due to the slow decomposition of the hazardous material being transported. The device must be in the vapor space when the tank is filled under maximum filling conditions. This device must also prevent an unacceptable amount of leakage of liquid in the case of overturning.

TP25 Sulphur trioxide 99.95% pure and above may be transported in tanks without an inhibitor provided that it is maintained at a temperature equal to or above 32.5 [degrees] C (90.5 [degrees] F).

TP26 The heating device must be exterior to the shell. For UN 3176, this requirement only applies when the hazardous material reacts dangerously with water.

TP27 A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in § 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

TP28 A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in § 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

TP29 A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in § 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

§ 172.102 Special provisions. [Effective until October 31, 2023]

TP30 This hazardous material may only be transported in insulated tanks.

TP31 This hazardous material may only be transported in tanks in the solid state.

TP32 Portable tanks may be used subject to the following conditions:

a. Each portable tank constructed of metal must be fitted with a pressure-relief device consisting of a reclosing spring loaded type, a frangible disc or a fusible element. The set to discharge for the spring loaded pressure relief device and the burst pressure for the frangible disc, as applicable, must not be greater than 2.65 bar for portable tanks with minimum test pressures greater than 4 bar;

b. The suitability for transport in tanks must be demonstrated using test 8(d) in Test Series 8 (see UN Manual of Tests and Criteria, Part 1, Sub-section 18.7) (IBR, see § 171.7 of this subchapter) or an alternative means approved by the Associate Administrator.

TP33 The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.

TP36 For material assigned this portable tank special provision, portable tanks used to transport such material may be equipped with fusible elements in the vapor space of the portable tank.

TP37 IM portable tanks are only authorized for the shipment of hydrogen peroxide solutions in water containing 72% or less hydrogen peroxide by weight. Pressure relief devices shall be designed to prevent the entry of foreign matter, the leakage of liquid and the development of any dangerous excess pressure. In addition, the portable tank must be designed so that internal surfaces may be effectively cleaned and passivated. Each tank must be equipped with pressure relief devices conforming to the following requirements:

Concentration of hydrogen per peroxide solution	**Total** [1]
52% or less	11
Over 52%, but not greater than 60%	22
Over 60%, but not greater than 72%	32

TP38 Each portable tank must be insulated with an insulating material so that the overall thermal conductance at 15.5 [degrees] C (60 [degrees] F) is no more than 1.5333 kilojoules per hour per square meter per degree Celsius (0.075 Btu per hour per square foot per degree Fahrenheit) temperature differential. Insulating materials may not promote corrosion to steel when wet.

TP39 [Removed and Reserved]

TP40 The portable tank must not be transported when connected with spray application equipment.

TP41 [Removed and Reserved]

[1] Total venting capacity in standard cubic feet hour (S.C.F.H.) per pound of hydrogen peroxide solution.

TP44 Each portable tank must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of § 173.24b(b) of this subchapter. Thickness of stainless steel for tank shell and heads must be the greater of 7.62 mm (0.300 inch) or the thickness required for a portable tank with a design pressure at least equal to 1.5 times the vapor pressure of the hazardous material at 46 [degrees] C (115 [degrees] F).

TP45 Each portable tank must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of 173.24b(b) of this subchapter. Thickness of stainless steel for portable tank shells and heads must be the greater of 6.35 mm (0.250 inch) or the thickness required for a portable tank with a design pressure at least equal to 1.3 times the vapor pressure of the hazardous material at 46 [degrees] C (115 [degrees] F).

TP46 Portable tanks in sodium metal service are not required to be hydrostatically retested.

TP47 The 2.5 year internal examination may be waived or substituted by other test methods or inspection procedures specified by the competent authority or its authorized body, provided that the portable tank is dedicated to the transport of the organometallic substances to which this tank special provision is assigned. However this examination is required when the conditions of § 180.605(f) are met.

(9) “W” codes. These provisions apply only to transportation by water:

Code/Special Provisions

W1 This substance in a non friable prill or granule form is not subject to the requirements of this subchapter when tested in accordance with the UN Manual of Test and Criteria (IBR, See § 171.7 of this subchapter) and is found to not meet the definition or criteria for inclusion in Division 5.1.

W7 Vessel stowage category for uranyl nitrate hexahydrate solution is “D” as defined in § 172.101(k)(4).

W8 Vessel stowage category for pyrophoric thorium metal or pyrophoric uranium metal is “D” as defined in § 172.101(k)(4).

W9 When offered for transportation by water, the following Specification packagings are not authorized unless approved by the Associate Administrator: woven plastic bags, plastic film bags, textile bags, paper bags, IBCs and bulk packagings.

W10 When offered for transportation by vessel, the use of Large Packagings (see § 171.8 of this subchapter) is prohibited.

W31 Non-bulk packagings must be hermetically sealed.

W40 Non-bulk bags are not allowed.

W41 When offered for transportation by water, this material must be packaged in bales and be securely and tightly bound with rope, wire or similar means.

W100 Non-bulk flexible, fibreboard or wooden packagings must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 172

History

[55 FR 52582, Dec. 21, 1990, as amended at 56 FR 66250, Dec. 20, 1991; 57 FR 45458, Oct. 1, 1992; 57 FR 47513, Oct. 16, 1992; 57 FR 52938, Nov. 5, 1992; 57 FR 59310, Dec. 15, 1992; 58 FR 50235, Sept. 24, 1993; 58 FR 51531, Oct. 1, 1993; 59 FR 28493, June 2, 1994; 59 FR 38064, July 26, 1994; 59 FR 48549, Sept. 21, 1994; 59 FR 49133, Sept. 26, 1994; 59 FR 67485, Dec. 29, 1994; 60 FR 26805, May 18, 1995; 60 FR 48780, 48787, Sept. 20, 1995; 60 FR 49048, 49072, Sept. 21, 1995; 60 FR 49106, 49110, Sept. 21, 1995; 61 FR 27166, 27172, May 30, 1996, as confirmed at 61 FR 51236, Oct. 1, 1996; 61 FR 28666, 28675, June 5, 1996, as confirmed at 61 FR 38605, 38642, July 25, 1996; 61 FR 50252, 50254, Sept. 25, 1996; 61 FR 50616, 50624, Sept. 26, 1996; 61 FR 51238, 51240, Oct. 1, 1996; 61 FR 51334, 51338, Oct. 1, 1996; 62 FR 24690, 24718, 24719, May 6, 1997; 62 FR 30767, 30772, June 5, 1997, as corrected and amended at 62 FR 34667, 34669, June 27, 1997; 63 FR 37454, 37461, July 10, 1998; 63 FR 52844, 52849, Oct. 1, 1998; 64 FR 10742, 10775, Mar. 5, 1999; 64 FR 45388, 45397, Aug. 19, 1999; 64 FR 51912, 51918, Sept. 27, 1999; 65 FR 50450, 50459, Aug. 18, 2000; 65 FR 58614, 58626, Sept. 29, 2000; 66 FR 8644, 8647, Feb. 1, 2001; 66 FR 33316, 33414, June 21, 2001; 66 FR 45177, 45182, Aug. 28, 2001; 66 FR 45376, 45379, Aug. 28, 2001; 67 FR 15736, 15743, Apr. 3, 2002; 67 FR 53118, 53135, Aug. 14, 2002, as corrected at 67 FR 54967, Aug. 27, 2002; 67 FR 61006, 61013, Sept. 27, 2002; 68 FR 19258, 19277, Apr. 18, 2003; 68 FR 44992, 45026, July 31, 2003; 68 FR 57629, 57632, Oct. 6, 2003; 68 FR 75734, 75741, Dec. 31, 2003; 69 FR 34604, 34611, June 22, 2004; 69 FR 54042, 54045, Sept. 7, 2004; 69 FR 75208, 75215, Dec. 15, 2004, as confirmed and amended at 72 FR 44930, 44947, 44948, Aug. 9, 2007; 69 FR 76044, 76150, Dec. 20, 2004; 70 FR 34066, 34075, June 13, 2005; 70 FR 34381, 34397, June 14, 2005; 70 FR 56084, 56098, Sept. 23, 2005; 70 FR 73156, 73164, Dec. 9, 2005; 71 FR 3418, 3427, Jan. 23, 2006; 71 FR 14586, 14601, Mar. 22, 2006; 71 FR 32244, 32258, June 2, 2006; 71 FR 33858, 33880, June 12, 2006; 71 FR 56894, 56895, Sept. 28, 2006; 71 FR 78596, 78626, Dec. 29, 2006; 72 FR 4442, 4455, Jan. 31, 2007; 72 FR 55091, Sept. 28, 2007; 73 FR 4699, 4716, Jan. 28, 2008; 74 FR 1770, 1799, Jan. 13, 2009; 74 FR 2200, 2249, Jan. 14, 2009; 75 FR 5376, 5391, Feb. 2, 2010; 76 FR 3308, Jan. 19, 2011; 76 FR 43510, 43526, July 20, 2011; 77 FR 60935, 60942, Oct. 5, 2012; 78 FR 988, 1070, Jan. 7, 2013.; 78 FR 1101, 1112, Jan. 7, 2013; 78 FR 14702, 14714, Mar. 7, 2013; 78 FR 15303, 15326, Mar. 11, 2013; 78 FR 42457, 42477, July 16, 2013; 78 FR 45880, 45892, July 30, 2013; 78 FR 60745, 60753, Oct. 2, 2013; 78 FR 65454, 65478, Oct. 31, 2013; 79 FR 15033, 15045, Mar. 18, 2014; 79 FR 46012, 46036, Aug. 6, 2014; 80 FR 1076, 1146, Jan. 8, 2015; 80 FR 9217, Feb. 20, 2015; 80 FR 72914, 72923, Nov. 23, 2015; 80 FR 79424, 79453, Dec. 21, 2015; 81 FR 3636, 3670, Jan. 21, 2016; 81 FR 35484, 35540, June 2, 2016; 82 FR 15796, 15870, Mar. 30, 2017; 83 FR 52878, 52899, Oct. 18, 2018; 84 FR 8006, 8027, Mar. 6, 2019; 85 FR 27810, 27876, May 11, 2020; 85 FR 44994, 45029, July 24, 2020; 85 FR 75680, 75712, Nov. 25, 2020; 85 FR 83366, 83380, Dec. 21, 2020, as corrected at 86 FR 2564, Jan. 13, 2021; 87 FR 44944, 44988, July 26, 2022; 87 FR 79752, 79772, Dec. 27, 2022; 88 FR 60356, 60375, Sept. 1, 2023]

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End of Document

49 CFR 172.102

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

Notice

. This section has more than one version with varying effective dates.

§ 172.102 Special provisions. [Effective October 31, 2023]

[PUBLISHER'S NOTE: As printed in the GPO edition of the CFR, some of the tables in this section are too wide to fit on an 80-character screen. Therefore, such tables have been formatted for the screen.]

(a) General. When Column 7 of the § 172.101 Table refers to a special provision for a hazardous material, the meaning and requirements of that provision are as set forth in this section. When a special provision specifies packaging or packaging requirements —

(1) The special provision is in addition to the standard requirements for all packagings prescribed in § 173.24 of this subchapter and any other applicable packaging requirements in subparts A and B of part 173 of this subchapter; and

(2) To the extent a special provision imposes limitations or additional requirements on the packaging provisions set forth in Column 8 of the § 172.101 Table, packagings must conform to the requirements of the special provision.

(b) Description of codes for special provisions. Special provisions contain packaging provisions, prohibitions, exceptions from requirements for particular quantities or forms of materials and requirements or prohibitions applicable to specific modes of transportation, as follows:

(1) A code consisting only of numbers (for example, "11") is multi-modal in application and may apply to bulk and non-bulk packagings.

(2) A code containing the letter "A" refers to a special provision which applies only to transportation by aircraft.

(3) A code containing the letter "B" refers to a special provision that applies only to bulk packaging requirements. Unless otherwise provided in this subchapter, these special provisions do not apply to UN, IM Specification portable tanks or IBCs.

(4) A code containing the letters "IB" or "IP" refers to a special provision that applies only to transportation in IBCs.

(5) A code containing the letter “N” refers to a special provision which applies only to non-bulk packaging requirements.

(6) A code containing the letter “R” refers to a special provision which applies only to transportation by rail.

(7) A code containing the letter “T” refers to a special provision which applies only to transportation in UN or IM Specification portable tanks.

(8) A code containing the letters “TP” refers to a portable tank special provision for UN or IM Specification portable tanks that is in addition to those provided by the portable tank instructions or the requirements in part 178 of this subchapter.

(9) A code containing the letter “W” refers to a special provision that applies only to transportation by water.

(c) Tables of special provisions. The following tables list, and set forth the requirements of, the special provisions referred to in Column 7 of the § 172.101 Table.

(1) Numeric provisions. These provisions are multi-modal and apply to bulk and non-bulk packagings:

Code/Special Provisions

1 This material is poisonous by inhalation (see § 171.8 of this subchapter) in Hazard Zone A (see § 173.116(a) or § 173.133(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.

2 This material is poisonous by inhalation (see § 171.8 of this subchapter) in Hazard Zone B (see § 173.116(a) or § 173.133(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.

3 This material is poisonous by inhalation (see § 171.8 of this subchapter) in Hazard Zone C (see § 173.116(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.

4 This material is poisonous by inhalation (see § 171.8 of this subchapter) in Hazard Zone D (see § 173.116(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.

5 If this material meets the definition for a material poisonous by inhalation (see § 171.8 of this subchapter), a shipping name must be selected which identifies the inhalation hazard, in Division 2.3 or Division 6.1, as appropriate.

6 This material is poisonous-by-inhalation and must be described as an inhalation hazard under the provisions of this subchapter.

8 A hazardous substance that is not a hazardous waste may be shipped under the shipping description “Other regulated substances, liquid or solid, n.o.s.”, as appropriate. In addition, for solid materials, special provision B54 applies.

9 Packaging for certain PCBs for disposal and storage is prescribed by EPA in 40 CFR 761.60 and 761.65.

11 The hazardous material must be packaged as either a liquid or a solid, as appropriate, depending on its physical form at 55°C (131°F) at atmospheric pressure.

12 In concentrations greater than 40 percent, this material has strong oxidizing properties and is capable of starting fires in contact with combustible materials. If appropriate, a package containing this material must conform to the additional labeling requirements of § 172.402 of this subchapter.

13 The words “Inhalation Hazard” shall be entered on each shipping paper in association with the shipping description, shall be marked on each non-bulk package in association with the proper

shipping name and identification number, and shall be marked on two opposing sides of each bulk package. Size of marking on bulk package must conform to § 172.302(b) of this subchapter. The requirements of §§ 172.203(m) and 172.505 of this subchapter do not apply.

14 Motor fuel antiknock mixtures are:

a. Mixtures of one or more organic lead mixtures (such as tetraethyl lead, triethylmethyl lead, diethyldimethyl lead, ethyltrimethyl lead, and tetramethyl lead) with one or more halogen compounds (such as ethylene dibromide and ethylene dichloride), hydrocarbon solvents or other equally efficient stabilizers; or

b. tetraethyl lead.

15 This entry applies to “Chemical kits” and “First aid kits” containing one or more compatible items of hazardous materials in boxes, cases, etc. that, for example, are used for medical, analytical, diagnostic, testing, or repair purposes. Kits that are carried on board transport vehicles for first aid or operating purposes are not subject to the requirements of this subchapter.

16 This description applies to smokeless powder and other solid propellants that are used as powder for small arms and have been classed as Division 1.3C, 1.4C and Division 4.1 in accordance with § 173.56 of this subchapter.

19 For domestic transportation only, the identification number “UN1075" may be used in place of the identification number specified in Column (4) of the § 172.101 Table. The identification number used must be consistent on package markings, shipping papers and emergency response information.

21 This material must be stabilized by appropriate means (e.g., addition of chemical inhibitor, purging to remove oxygen) to prevent dangerous polymerization (see § 173.21(f) of this subchapter).

22 If the hazardous material is in dispersion in organic liquid, the organic liquid must have a flash point above 50°C (122°F).

23 This material may be transported under the provisions of Division 4.1 only if it is so packed that the percentage of diluent will not fall below that stated in the shipping description at any time during transport. Quantities of not more than 500 g per package with not less than 10 percent water by mass may also be classed in Division 4.1, provided a negative test result is obtained when tested in accordance with test series 6(c) of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

24 Alcoholic beverages containing more than 70 percent alcohol by volume must be transported as materials in Packing Group II. Alcoholic beverages containing more than 24 percent but not more than 70 percent alcohol by volume must be transported as materials in Packing Group III.

26 This entry does not include ammonium permanganate, the transport of which is prohibited except when approved by the Associate Administrator.

28 The dihydrated sodium salt of dichloroisocyanuric acid does not meet the criteria for inclusion in Division 5.1 (Oxidizer) and is not subject to the requirements of this subchapter unless meeting the criteria for inclusion in another class or division.

30 Sulfur is not subject to the requirements of this subchapter if transported in a non-bulk packaging or if formed to a specific shape (for example, prills, granules, pellets, pastilles, or flakes). A bulk packaging containing sulfur is not subject to the placarding requirements of subpart F of this part, if it is marked with the appropriate identification number as required by subpart D of this part. Molten sulfur must be marked as required by § 172.325 of this subchapter.

31 Materials which have undergone sufficient heat treatment to render them non-hazardous are not subject to the requirements of this subchapter.

32 Polymeric beads and molding compounds may be made from polystyrene, poly(methyl methacrylate) or other polymeric material.

33 Ammonium nitrites and mixtures of an inorganic nitrite with an ammonium salt are prohibited.

34 The commercial grade of calcium nitrate fertilizer, when consisting mainly of a double salt (calcium nitrate and ammonium nitrate) containing not more than 10 percent ammonium nitrate and at least 12 percent water of crystallization, is not subject to the requirements of this subchapter.

35 Antimony sulphides and oxides which do not contain more than 0.5 percent of arsenic calculated on the total mass do not meet the definition of Division 6.1.

37 Unless it can be demonstrated by testing that the sensitivity of the substance in its frozen state is no greater than in its liquid state, the substance must remain liquid during normal transport conditions. It must not freeze at temperatures above -15°C (5°F).

38 If this material shows a violent effect in laboratory tests involving heating under confinement, the labeling requirements of Special Provision 53 apply, and the material must be packaged in accordance with packing method OP6 in § 173.225 of this subchapter. If the SADT of the technically pure substance is higher than 75°C, the technically pure substance and formulations derived from it are not self-reactive materials and, if not meeting any other hazard class, are not subject to the requirements of this subchapter.

39 This substance may be carried under provisions other than those of Class 1 only if it is so packed that the percentage of water will not fall below that stated at any time during transport. When phlegmatized with water and inorganic inert material, the content of urea nitrate must not exceed 75 percent by mass and the mixture should not be capable of being detonated by test 1(a)(i) or test 1(a)(ii) in the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

40 Polyester resin kits consist of two components: A base material (either Class 3 or Division 4.1, Packing Group II or III) and an activator (organic peroxide), each separately packed in an inner packaging. The organic peroxide must be type D, E, or F, not requiring temperature control. The components may be placed in the same outer packaging provided they will not interact dangerously in the event of leakage. The Packing Group assigned will be II or III, according to the classification criteria for either Class 3 or Division 4.1, as appropriate, applied to the base material. Additionally, unless otherwise excepted in this subchapter, polyester resin kits must be packaged in specification combination packagings based on the performance level of the base material contained within the kit.

41 This material at the Packing Group II hazard criteria level may be transported in Large Packagings.

43 The membrane filters, including paper separators and coating or backing materials, that are present in transport, must not be able to propagate a detonation as tested by one of the tests described in the UN Manual of Tests and Criteria, Part I, Test series 1(a) (IBR, see § 171.7 of this subchapter). On the basis of the results of suitable burning rate tests, and taking into account the standard tests in the UN Manual of Tests and Criteria, Part III, subsection 33.2.1 (IBR, see § 171.7 of this subchapter), nitrocellulose membrane filters in the form in which they are to be transported that do not meet the criteria for a Division 4.1 material are not subject to the requirements of this subchapter. Packagings must be so constructed that explosion is not possible by reason of increased internal pressure. Nitrocellulose membrane filters covered by this entry, each with a mass not exceeding 0.5 g, are not subject to the requirements of this subchapter when contained individually in an article or a sealed packet.

44 The formulation must be prepared so that it remains homogenous and does not separate during transport. Formulations with low nitrocellulose contents and neither showing dangerous properties when tested for their ability to detonate, deflagrate or explode when heated under defined confinement by the appropriate test methods and criteria in the UN Manual of Tests and Criteria

(IBR, see § 171.7 of this subchapter), nor classed as a Division 4.1 (flammable solid) when tested in accordance with the procedures specified in § 173.124 of this subchapter (chips, if necessary, crushed and sieved to a particle size of less than 1.25 mm), are not subject to the requirements of this subchapter.

45 Temperature should be maintained between 18°C (64.4°F) and 40°C (104°F). Tanks containing solidified methacrylic acid must not be reheated during transport.

46 This material must be packed in accordance with packing method OP6 (see § 173.225 of this subchapter). During transport, it must be protected from direct sunshine and stored (or kept) in a cool and well-ventilated place, away from all sources of heat.

47 Mixtures of solids that are not subject to this subchapter and flammable liquids may be transported under this entry without first applying the classification criteria of Division 4.1, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Except when the liquids are fully absorbed in solid material contained in sealed bags, for single packagings, each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level. Sealed packets and articles containing less than 10 mL of a Class 3 liquid in Packing Group II or III absorbed onto a solid material are not subject to this subchapter provided there is no free liquid in the packet or article.

48 Mixtures of solids that are not subject to this subchapter and toxic liquids may be transported under this entry without first applying the classification criteria of Division 6.1, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. For single packagings, each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level. This entry may not be used for solids containing a Packing Group I liquid.

49 Mixtures of solids that are not subject to this subchapter and corrosive liquids may be transported under this entry without first applying the classification criteria of Class 8, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. For single packagings, each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level.

50 Cases, cartridge, empty with primer which are made of metallic or plastic casings and meeting the classification criteria of Division 1.4 are not regulated for domestic transportation.

51 This description applies to items previously described as “Toy propellant devices, Class C” and includes reloadable kits. Model rocket motors containing 30 grams or less propellant are classed as Division 1.4S and items containing more than 30 grams of propellant but not more than 62.5 grams of propellant are classed as Division 1.4C.

52 This entry may only be used for substances that are too insensitive for acceptance into Class 1 (explosive) when tested in accordance with Test Series 2 in the UN Manual of Tests and Criteria, Part I (incorporated by reference; see § 171.7 of this subchapter).

53 Packages of these materials must bear the subsidiary risk label, “EXPLOSIVE”, and the subsidiary hazard class/division must be entered in parentheses immediately following the primary hazard class in the shipping description, unless otherwise provided in this subchapter or through an approval issued by the Associate Administrator, or the competent authority of the country of origin. A copy of the approval shall accompany the shipping papers.

54 Maneb or maneb preparations not meeting the definition of Division 4.3 or any other hazard class are not subject to the requirements of this subchapter when transported by motor vehicle, rail car, or aircraft.

55 This device must be approved in accordance with § 173.56 of this subchapter by the Associate Administrator.

56 A means to interrupt and prevent detonation of the detonator from initiating the detonating cord must be installed between each electric detonator and the detonating cord ends of the jet perforating guns before the charged jet perforating guns are offered for transportation.

57 Maneb or Maneb preparations stabilized against self-heating need not be classified in Division 4.2 when it can be demonstrated by testing that a volume of 1 m<3> of substance does not self-ignite and that the temperature at the center of the sample does not exceed 200°C, when the sample is maintained at a temperature of not less than 75° C [+/-] 2°C for a period of 24 hours, in accordance with procedures set forth for testing self-heating materials in the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

58 Aqueous solutions of Division 5.1 inorganic solid nitrate substances are considered as not meeting the criteria of Division 5.1 if the concentration of the substances in solution at the minimum temperature encountered in transport is not greater than 80% of the saturation limit.

59 Ferrocerium, stabilized against corrosion, with a minimum iron content of 10 percent is not subject to the requirements of this subchapter.

61 A chemical oxygen generator is spent if its means of ignition and all or a part of its chemical contents have been expended.

62 Oxygen generators (see § 171.8 of this subchapter) are not authorized for transportation under this entry.

64 The group of alkali metals includes lithium, sodium, potassium, rubidium, and caesium.

65 The group of alkaline earth metals includes magnesium, calcium, strontium, and barium.

66 Formulations of these substances containing not less than 30 percent non-volatile, non-flammable phlegmatizer are not subject to this subchapter.

70 Black powder that has been classed in accordance with the requirements of § 173.56 of this subchapter may be reclassed and offered for domestic transportation as a Division 4.1 material if it is offered for transportation and transported in accordance with the limitations and packaging requirements of § 173.170 of this subchapter.

74 During transport, this material must be protected from direct sunshine and stored or kept in a cool and well-ventilated place, away from all sources of heat.

78 This entry may not be used to describe compressed air which contains more than 23.5 percent oxygen. Compressed air containing greater than 23.5 percent oxygen must be shipped using the description “Compressed gas, oxidizing, n.o.s., UN3156.”

79 This entry may not be used for mixtures that meet the definition for oxidizing gas.

81 Polychlorinated biphenyl items, as defined in 40 CFR 761.3, for which specification packagings are impractical, may be packaged in non-specification packagings meeting the general packaging requirements of subparts A and B of part 173 of this subchapter. Alternatively, the item itself may be used as a packaging if it meets the general packaging requirements of subparts A and B of part 173 of this subchapter.

101 The name of the particular substance or article must be specified.

102 The ends of the detonating cord must be tied fast so that the explosive cannot escape. The articles may be transported as in Division 1.4 Compatibility Group D (1.4D) if all of the conditions specified in § 173.63(a) of this subchapter are met.

105 The word “Agents” may be used instead of “Explosives” when approved by the Associate Administrator.

106 The recognized name of the particular explosive may be specified in addition to the type.

107 The classification of the substance is expected to vary especially with the particle size and packaging but the border lines have not been experimentally determined; appropriate classifications should be verified following the test procedures in §§ 173.57 and 173.58 of this subchapter.

108 Fireworks must be so constructed and packaged that loose pyrotechnic composition will not be present in packages during transportation.

109 Rocket motors must be nonpropulsive in transportation unless approved in accordance with § 173.56 of this subchapter. A rocket motor to be considered “nonpropulsive” must be capable of unrestrained burning and must not appreciably move in any direction when ignited by any means.

110 Fire extinguishers transported under UN1044 and oxygen cylinders transported for emergency use under UN1072 may include installed actuating cartridges (cartridges, power device of Division 1.4C or 1.4S), without changing the classification of Division 2.2, provided the aggregate quantity of deflagrating (propellant) explosives does not exceed 3.2 grams per cylinder. Oxygen cylinders with installed actuating cartridges as prepared for transportation must have an effective means of preventing inadvertent activation.

111 Explosive substances of Division 1.1 Compatibility Group A (1.1A) are forbidden for transportation if dry or not desensitized, unless incorporated in a device.

113 The sample must be given a tentative approval by an agency or laboratory in accordance with § 173.56 of this subchapter.

114 Jet perforating guns, charged, oil well, without detonator may be reclassed to Division 1.4 Compatibility Group D (1.4D) if the following conditions are met:

a. The total weight of the explosive contents of the shaped charges assembled in the guns does not exceed 90.5 kg (200 pounds) per vehicle; and

b. The guns are packaged in accordance with Packing Method US1 as specified in § 173.62 of this subchapter.

115 Boosters with detonator, detonator assemblies and boosters with detonators in which the total explosive charge per unit does not exceed 25 g, and which will not mass detonate and undergo only limited propagation in the shipping package may be assigned to 1.4B classification code. Mass detonate means more than 90 percent of the devices tested in a package explode practically simultaneously. Limited propagation means that if one booster near the center of the package is exploded, the aggregate weight of explosives, excluding ignition and delay charges, in this and all additional boosters in the outside packaging that explode may not exceed 25 g.

116 Fuzes, detonating may be classed in Division 1.4 if the fuzes do not contain more than 25 g of explosive per fuze and are made and packaged so that they will not cause functioning of other fuzes, explosives or other explosive devices if one of the fuzes detonates in a shipping packaging or in adjacent packages.

117 If shipment of the explosive substance is to take place at a time that freezing weather is anticipated, the water contained in the explosive substance must be mixed with denatured alcohol so that freezing will not occur.

118 This substance may not be transported under the provisions of Division 4.1 unless specifically authorized by the Associate Administrator (see UN0143 or UN0150 as appropriate).

119 This substance, when in quantities of not more than 11.5 kg (25.3 pounds), with not less than 10 percent water, by mass, also may be classed as Division 4.1, provided a negative test result is obtained when tested in accordance with test series 6(c) of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

120 The phlegmatized substance must be significantly less sensitive than dry PETN.

121 This substance, when containing less alcohol, water or phlegmatizer than specified, may not be transported unless approved by the Associate Administrator.

123 Any explosives, blasting, type C containing chlorates must be segregated from explosives containing ammonium nitrate or other ammonium salts.

125 Lactose or glucose or similar materials may be used as a phlegmatizer provided that the substance contains not less than 90%, by mass, of phlegmatizer. These mixtures may be classified in Division 4.1 when tested in accordance with test series 6(c) of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter) and approved by the Associate Administrator. Testing must be conducted on at least three packages as prepared for transport. Mixtures containing at least 98%, by mass, of phlegmatizer are not subject to the requirements of this subchapter. Packages containing mixtures with not less than 90% by mass, of phlegmatizer need not bear a POISON subsidiary risk label.

127 Mixtures containing oxidizing and organic materials transported under this entry may not meet the definition and criteria of a Class 1 material. (See § 173.50 of this subchapter.)

128 Regardless of the provisions of § 172.101(c)(12), aluminum smelting by-products and aluminum remelting by-products described under this entry, meeting the definition of Class 8, Packing Group II and III may be classed as a Division 4.3 material and transported under this entry. The presence of a Class 8 hazard must be communicated as required by this Part for subsidiary hazards.

129 These materials may not be classified and transported unless authorized by the Associate Administrator on the basis of results from Series 2 Test and a Series 6(c) Test from the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter) on packages as prepared for transport. The packing group assignment and packaging must be approved by the Associate Administrator on the basis of the criteria in § 173.21 of this subchapter and the package type used for the Series 6(c) test.

130 “Batteries, dry, sealed, n.o.s.,” commonly referred to as dry batteries, are hermetically sealed and generally utilize metals (other than lead) and/or carbon as electrodes. These batteries are typically used for portable power applications. The rechargeable (and some non-rechargeable) types have gelled alkaline electrolytes (rather than acidic) making it difficult for them to generate hydrogen or oxygen when overcharged and therefore, differentiating them from non-spillable batteries. Dry batteries specifically covered by another entry in the § 172.101 Table must be transported in accordance with the requirements applicable to that entry. For example, nickel-metal hydride batteries transported by vessel in certain quantities are covered by another entry (See Batteries, nickel-metal hydride, UN3496). Dry batteries not specifically covered by another entry in the § 172.101 Table are covered by this entry (i.e., Batteries, dry, sealed, n.o.s.) and are not subject to requirements of this subchapter except for the following:

(a) Incident reporting. For transportation by aircraft, a telephone report in accordance with § 171.15(a) is required if a fire, violent rupture, explosion or dangerous evolution of heat (i.e., an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a dry battery. For all modes of transportation, a written report submitted, retained, and updated in accordance with § 171.16 is required if a fire, violent rupture, explosion or dangerous evolution of heat occurs as a direct result of a dry battery or battery-powered device.

(b) Preparation for transport. Batteries and battery-powered device(s) containing batteries must be prepared and packaged for transport in a manner to prevent:

(1) A dangerous evolution of heat;

(2) Short circuits, including but not limited to the following methods:

(i) Packaging each battery or each battery-powered device when practicable, in fully enclosed inner packagings made of non-conductive material;

(ii) Separating or packaging batteries in a manner to prevent contact with other batteries, devices or conductive materials (e.g., metal) in the packagings; or

(iii) Ensuring exposed terminals or connectors are protected with non-conductive caps, non-conductive tape, or by other appropriate means; and

(3) Damage to terminals. If not impact resistant, the outer packaging should not be used as the sole means of protecting the battery terminals from damage or short circuiting. Batteries must be securely cushioned and packed to prevent shifting which could loosen terminal caps or reorient the terminals to produce short circuits. Batteries contained in devices must be securely installed. Terminal protection methods include but are not limited to the following:

(i) Securely attaching covers of sufficient strength to protect the terminals;

(ii) Packaging the battery in a rigid plastic packaging; or

(iii) Constructing the battery with terminals that are recessed or otherwise protected so that the terminals will not be subjected to damage if the package is dropped.

(c) Additional air transport requirements. For a battery whose voltage (electrical potential) exceeds 9 volts—

(1) When contained in a device, the device must be packaged in a manner that prevents unintentional activation or must have an independent means of preventing unintentional activation (e.g., packaging restricts access to activation switch, switch caps or locks, recessed switches, trigger locks, temperature sensitive circuit breakers, etc.); and

(2) An indication of compliance with this special provision must be provided by marking each package with the words “not restricted” or by including the words “not restricted” on a transport document such as an air waybill accompanying the shipment.

(d) Used or spent battery exception. Used or spent dry batteries of both non-rechargeable and rechargeable designs, with a marked rating up to 9-volt that are combined in the same package and transported by highway or rail for recycling, reconditioning, or disposal are not subject to this special provision or any other requirement of the HMR. Note that batteries utilizing different chemistries (i.e., those battery chemistries specifically covered by another entry in the § 172.101 Table) as well as dry batteries with a marked rating greater than 9-volt may not be combined with used or spent batteries in the same package. Note also that this exception does not apply to batteries that have been reconditioned for reuse.

131 This material may not be offered for transportation unless approved by the Associate Administrator.

132 This description may only be used for ammonium nitrate-based compound fertilizers. They must be classified in accordance with the procedure as set out in the Manual of Tests and Criteria, part III, section 39 (IBR, see § 171.7 of this subchapter). Fertilizers meeting the criteria for this identification number are only subject to the requirements of this subchapter when offered for transportation and transported by air or vessel.

134 This entry applies only to vehicles powered by wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, and equipment powered by wet batteries or sodium batteries that are transported with these batteries installed. Lithium batteries installed in a cargo transport unit, designed only to provide power external to the transport unit must use the proper shipping name “Lithium batteries installed in cargo transport unit” found in the § 172.101 Hazardous Materials Table.

a. For the purpose of this special provision, vehicles are self-propelled apparatus designed to carry one or more persons or goods. Examples of such vehicles are electrically-powered cars, motorcycles, scooters, three- and four-wheeled vehicles or motorcycles, trucks, locomotives, bicycles (pedal cycles with an electric motor) and other vehicles of this type (e.g., self-balancing vehicles or vehicles not equipped with at least one seating position), lawn tractors, self-propelled farming and construction equipment, boats, aircraft, wheelchairs and other mobility aids. This includes vehicles transported in a packaging. In this case, some parts of the vehicle may be detached from its frame to fit into the packaging.

b. Examples of equipment are lawnmowers, cleaning machines, or model boats and model aircraft. Equipment powered by lithium metal batteries or lithium ion batteries must be described using the entries “Lithium metal batteries contained in equipment” or “Lithium metal batteries packed with equipment” or “Lithium ion batteries contained in equipment” or “Lithium ion batteries packed with equipment,” as appropriate.

c. Self-propelled vehicles or equipment that also contain an internal combustion engine must be described using the entries “Engine, internal combustion, flammable gas powered” or “Engine, internal combustion, flammable liquid powered” or “Vehicle, flammable gas powered” or “Vehicle, flammable liquid powered,” as appropriate. These entries include hybrid electric vehicles powered by both an internal combustion engine and batteries. Additionally, self-propelled vehicles or equipment that contain a fuel cell engine must be described using the entries “Engine, fuel cell, flammable gas powered” or “Engine, fuel cell, flammable liquid powered” or “Vehicle, fuel cell, flammable gas powered” or “Vehicle, fuel cell, flammable liquid powered,” as appropriate. These entries include hybrid electric vehicles powered by a fuel cell engine, an internal combustion engine, and batteries.

135 Internal combustion engines installed in a vehicle must be described using “Vehicle, flammable gas powered” or “Vehicle, flammable liquid powered,” as appropriate. If a vehicle is powered by a flammable liquid and a flammable gas internal combustion engine, it must be described using “Vehicle, flammable gas powered.” This includes hybrid electric vehicles powered by both an internal combustion engine and wet, sodium or lithium batteries installed. If a fuel cell engine is installed in a vehicle, the vehicle must be described using “Vehicle, fuel cell, flammable gas powered” or “Vehicle, fuel cell, flammable liquid powered,” as appropriate. This includes hybrid electric vehicles powered by a fuel cell, an internal combustion engine, and wet, sodium or lithium batteries installed. For the purpose of this special provision, vehicles are self-propelled apparatus designed to carry one or more persons or goods. Examples of such vehicles are cars, motorcycles, trucks, locomotives, scooters, three- and four-wheeled vehicles or motorcycles, lawn tractors, self-propelled farming and construction equipment, boats, and aircraft. Furthermore, lithium batteries installed in a cargo transport unit, designed only to provide power external to the transport unit must be described using the proper shipping name “Lithium batteries installed in cargo transport unit” found in the § 172.101 Hazardous Materials Table.

136 This entry applies only to articles, machinery, and apparatus containing hazardous materials as an integral element of the article, machinery, or apparatus. It may not be used to describe articles, machinery, or apparatus for which a proper shipping name exists in the § 172.101 Table. Except when approved by the Associate Administrator, these items may only contain hazardous materials for which exceptions are referenced in Column (8) of the § 172.101 Table and are provided in part 173, subparts D and G, of this subchapter. Hazardous materials shipped under this entry are excepted from the labeling requirements of this subchapter unless offered for transportation or transported by aircraft and are not subject to the placarding requirements of subpart F of this part. Orientation markings as described in § 172.312(a)(2) are required when liquid hazardous materials may escape due to incorrect orientation. The article, machinery, or apparatus, if unpackaged, or the packaging in which it is contained shall be marked “Dangerous goods in articles” or “Dangerous goods in machinery” or “Dangerous goods in apparatus” as appropriate, with the identification number UN3363. For transportation by aircraft, articles,

machinery, or apparatus, may not contain any material forbidden for transportation by passenger or cargo aircraft. The Associate Administrator may except from the requirements of this subchapter articles, machinery, and apparatus provided:

a. It is shown that it does not pose a significant risk in transportation;

b. The quantities of hazardous materials do not exceed those specified in § 173.4a of this subchapter; and

c. The equipment, and machinery or apparatus articles conforms with § 173.222 of this subchapter.

137 Cotton, dry; flax, dry; sisal, dry; and tampico fiber, dry are not subject to the requirements of this subchapter when they are baled in accordance with ISO 8115, “Cotton Bales — Dimensions and Density” (IBR, see § 171.7 of this subchapter) to a density of not less than 360 kg/m<3> (22.1 lb/ft<3>) for cotton, 400 kg/m<3> (24.97 lb/ft<3>) for flax, 620 kg/m<3> (38.71 lb/ft<3>) for sisal and 360 kg/m<3> (22.1 lb/ft<3>) for tampico fiber and transported in a freight container or closed transport vehicle.

138 This entry applies to lead compounds which, when mixed in a ratio of 1:1,000 with 0.07 M (Molar concentration) hydrochloric acid and stirred for one hour at a temperature of 23° C +/- 2° C, exhibit a solubility of more than 5%. Lead compounds which, when mixed in a ratio of 1:1,000 with 0.07 M (Molar concentration) hydrochloric acid and stirred for one hour at a temperature of 23° C +/- 2° C, exhibit a solubility of 5% or less are not subject to the requirements of this subchapter unless they meet criteria as another hazard class or division. Lead compounds that have a solubility of 5% or less in accordance with this special provision are not subject to the requirements of this subchapter that pertain to Marine Pollutants.

139 Use of the “special arrangement” proper shipping names for international shipments must be made under an IAEA Certificate of Competent Authority issued by the Associate Administrator in accordance with the requirements in § 173.471, § 173.472, or § 173.473 of this subchapter. Use of these proper shipping names for domestic shipments may be made only under a DOT special permit, as defined in, and in accordance with the requirements of subpart B of part 107 of this subchapter.

140 This material is regulated only when it meets the defining criteria for a hazardous substance or a marine pollutant. In addition, the column 5 reference is modified to read “III” on those occasions when this material is offered for transportation or transported by highway or rail.

141 A toxin obtained from a plant, animal, or bacterial source containing an infectious substance, or a toxin contained in an infectious substance, must be classed as Division 6.2, described as an infectious substance, and assigned to UN 2814 or UN 2900, as appropriate.

142 These hazardous materials may not be classified and transported unless authorized by the Associate Administrator. The Associate Administrator will base the authorization on results from Series 2 tests and a Series 6(c) test from the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter) on packages as prepared for transport in accordance with the requirements of this subchapter.

144 If transported as a residue in an underground storage tank (UST), as defined in 40 CFR 280.12, that has been cleaned and purged or rendered inert according to the American Petroleum Institute (API) Standard 1604 (IBR, see § 171.7 of this subchapter), then the tank and this material are not subject to any other requirements of this subchapter. However, sediments remaining in the tank that meet the definition for a hazardous material are subject to the applicable regulations of this subchapter.

145 This entry applies to formulations that neither detonate in the cavitated state nor deflagrate in laboratory testing, show no effect when heated under confinement, exhibit no explosive power, and are thermally stable (self-accelerating decomposition temperature (SADT) at 60°C (140°F) or

higher for a 50 kg (110.2 lbs.) package). Formulations not meeting these criteria must be transported under the provisions applicable to the appropriate entry in the Organic Peroxide Table in § 173.225 of this subchapter.

146 This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in § 171.8 of this subchapter, or any hazard class, as defined in part 173 of this subchapter, if it is designated as environmentally hazardous by another Competent Authority. This provision may be used for both domestic and international shipments.

147 This entry applies to non-sensitized emulsions, suspensions, and gels consisting primarily of a mixture of ammonium nitrate and fuel, intended to produce a Type E blasting explosive only after further processing prior to use. The mixture for emulsions typically has the following composition: 60-85% ammonium nitrate; 5-30% water; 2-8% fuel; 0.5-4% emulsifier or thickening agent; 0-10% soluble flame suppressants; and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate. The mixture for suspensions and gels typically has the following composition: 60-85% ammonium nitrate; 0-5% sodium or potassium perchlorate; 0-17% hexamine nitrate or monomethylamine nitrate; 5-30% water; 2-15% fuel; 0.5-4% thickening agent; 0-10% soluble flame suppressants; and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate. These substances must satisfy the criteria for classification as an ammonium nitrate emulsion of Test Series 8 of the UN Manual of Tests and Criteria, Part I, Section 18 (IBR, see § 171.7 of this subchapter), and may not be classified and transported unless approved by the Associate Administrator.

148. For domestic transportation, this entry directs to § 173.66 for:

a. The standards for transporting a single bulk hazardous material for blasting by cargo tank motor vehicles (CTMV); and

b. The standards for CTMVs capable of transporting multiple hazardous materials for blasting in bulk and non-bulk packagings (i.e., a multipurpose bulk truck (MBT)).

149 Except for transportation by aircraft, when transported as a limited quantity or a consumer commodity, the maximum net capacity specified in § 173.150(b)(2) of this subchapter for inner packagings may be increased to 5 L (1.3 gallons).

150 This description may only be used for ammonium nitrate-based fertilizers. They must be classified in accordance with the procedure as set out in the Manual of Tests and Criteria, part III, section 39 (IBR, see § 171.7 of this subchapter).

151 If this material meets the definition of a flammable liquid in § 173.120 of this subchapter, a FLAMMABLE LIQUID label is also required and the basic description on the shipping paper must indicate the Class 3 subsidiary hazard.

155 Fish meal, fish scrap and krill meal may not be transported if the temperature at the time of loading either exceeds 35° C (95° F), or exceeds 5° C (41° F) above the ambient temperature, whichever is higher.

156 Asbestos that is immersed or fixed in a natural or artificial binder material, such as cement, plastic, asphalt, resins or mineral ore, or contained in manufactured products is not subject to the requirements of this subchapter.

157 When transported as a limited quantity or a consumer commodity, the maximum net capacity specified in § 173.151(b)(1)(i) of this subchapter for inner packagings may be increased to 5 kg (11 pounds).

159 This material must be protected from direct sunshine and kept in a cool, well-ventilated place away from sources of heat.

160 This entry applies to safety devices for vehicles, vessels or aircraft, e.g. air bag inflators, air bag modules, seat-belt pretensioners, and pyromechanical devices containing Class 1 (explosive) materials or materials of other hazard classes. These articles must be tested in accordance with Test series 6(c) of Part I of the UN Manual of Tests and Criteria (incorporated by reference; see § 171.7 of this subchapter), with no explosion of the device, no fragmentation of device casing or pressure vessel, and no projection hazard or thermal effect that would significantly hinder fire-fighting or other emergency response efforts in the immediate vicinity. If the air bag inflator unit satisfactorily passes the series 6(c) test, it is not necessary to repeat the test on the air bag module. This entry does not apply to life saving appliances described in § 173.219 (UN2990 and UN3072).

162 This material may be transported under the provisions of Division 4.1 only if it is packed so that at no time during transport will the percentage of diluent fall below the percentage that is stated in the shipping description.

163 Substances must satisfactorily pass Test Series 8 of the UN Manual of Tests and Criteria, Part I, Section 18 (IBR, see § 171.7 of this subchapter).

164 Substances must not be transported under this entry unless approved by the Associate Administrator on the basis of the results of appropriate tests according to Part I of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter). The material must be packaged so that the percentage of diluent does not fall below that stated in the approval at any time during transportation.

165 These substances are susceptible to exothermic decomposition at elevated temperatures. Decomposition can be initiated by heat, moisture or by impurities (e.g., powdered metals (iron, manganese, cobalt, magnesium)). During the course of transportation, these substances must be shaded from direct sunlight and all sources of heat and be placed in adequately ventilated areas.

166 When transported in non-friable tablet form, calcium hypochlorite, dry, may be transported as a Packing Group III material.

167 These storage systems must always be considered as containing hydrogen. A metal hydride storage system installed in or intended to be installed in a vehicle or equipment or in vehicle or equipment components must be approved for transport by the Associate Administrator. A copy of the approval must accompany each shipment.

168 For lighters containing a Division 2.1 gas (See § 171.8 of this subchapter), representative samples of each new lighter design must be examined and successfully tested as specified in § 173.308(b)(3). For criteria in determining what is a new lighter design, See § 173.308(b)(1). For transportation of new lighter design samples for examination and testing, See § 173.308(b)(2). The examination and testing of each lighter design must be performed by a person authorized by the Associate Administrator under the provisions of subpart E of part 107 of this chapter, as specified in § 173.308(a)(4). For continued use of approvals dated prior to January 1, 2012, See § 173.308(b)(5).

> For non-pressurized lighters containing a Class 3 (flammable liquid) material, its design, description, and packaging must be approved by the Associate Administrator prior to being offered for transportation or transported in commerce. In addition, a lighter design intended to contain a non-pressurized Class 3 material is excepted from the examination and testing criteria specified in § 173.308(b)(3). An unused lighter or a lighter that is cleaned of residue and purged of vapors is not subject to the requirements of this subchapter.

169 This entry applies to lighter refills (See § 171.8 of this subchapter) that contain a Division 2.1 (flammable) gas but do not contain an ignition device. Lighter refills offered for transportation under this entry may not exceed 4 fluid ounces capacity (7.22 cubic inches) or contain more than 65 grams of fuel. A lighter refill exceeding 4 fluid ounces capacity (7.22 cubic inches) or containing more than 65 grams of fuel must be classed as a Division 2.1 material, described with the proper

shipping name appropriate for the material, and packaged in the packaging specified in part 173 of this subchapter for the flammable gas contained therein. In addition, a container exceeding 4 fluid ounces volumetric capacity (7.22 cubic inches) or containing more than 65 grams of fuel may not be connected or manifolded to a lighter or similar device and must also be described and packaged according to the fuel contained therein. For transportation by passenger-carrying aircraft, the net mass of lighter refills may not exceed 1 kg per package, and, for cargo-only aircraft, the net mass of lighter refills may not exceed 15 kg per package. See § 173.306(h) of this subchapter.

170 Air must be eliminated from the vapor space by nitrogen or other means.

171 This entry may only be used when the material is transported in non-friable tablet form or for granular or powered mixtures that have been shown to meet the PG III criteria in § 173.127.

172 This entry includes alcohol mixtures containing up to 5% petroleum products.

173. For adhesives, printing inks, printing ink-related materials, paints, paint-related materials, and resin solutions which are assigned to UN3082, and do not meet the definition of another hazard class, metal or plastic packaging for substances of packing groups II and III in quantities of 5 L (1.3 gallons) or less per packaging are not required to meet the UN performance package testing when transported:

a. Except for transportation by aircraft, in palletized loads, a pallet box or unit load device (e.g. individual packaging placed or stacked and secured by strapping, shrink or stretch-wrapping or other suitable means to a pallet). For vessel transport, the palletized loads, pallet boxes or unit load devices must be firmly packed and secured in closed cargo transport units; or

b. Except for transportation by aircraft, as an inner packaging of a combination packaging with a maximum net mass of 40 kg (88 pounds). For transportation by aircraft, as an inner packaging of a combination packaging with a maximum gross mass of 30 kg when packaged as a limited quantity in accordance with § 173.27(f).

175 This substance must be stabilized when in concentrations of not more than 99%.

176. This entry must be used for formaldehyde solutions containing methanol as a stabilizer. Formaldehyde solutions not containing methanol and not meeting the Class 3 flammable liquid criteria must be described using a different proper shipping name.

177 Gasoline, or, ethanol and gasoline mixtures, for use in internal combustion engines (e.g., in automobiles, stationary engines and other engines) must be assigned to Packing Group II regardless of variations in volatility.

181 When a package contains a combination of lithium batteries contained in equipment and lithium batteries packed with equipment, the following requirements apply:

a. The shipper must ensure that all applicable requirements of § 173.185 of this subchapter are met. The total mass of lithium batteries contained in any package must not exceed the quantity limits in columns (9A) and (9B) for passenger aircraft or cargo aircraft, as applicable;

b. Except as provided in § 173.185(c)(3) of this subchapter, the package must be marked “UN 3091 Lithium metal batteries packed with equipment”, or “UN 3481 Lithium ion batteries packed with equipment,” as appropriate. If a package contains both lithium metal batteries and lithium ion batteries packed with and contained in equipment, the package must be marked as required for both battery types. However, button cell batteries installed in equipment (including circuit boards) need not be considered; and

c. The shipping paper must indicate “UN 3091 Lithium metal batteries packed with equipment” or “UN 3481 Lithium ion batteries packed with equipment,” as appropriate. If a package contains both lithium metal batteries and lithium ion batteries packed with and contained in equipment, then the shipping paper must indicate both “UN 3091 Lithium metal batteries packed with equipment” and “UN 3481 Lithium ion batteries packed with equipment.”

182 Equipment containing only lithium batteries must be classified as either UN 3091 or UN 3481.

196 The nitrocellulose must meet the criteria of the Bergmann-Junk test or methyl violet paper test in the UN Manual of Tests and Criteria, Appendix 10 (IBR, see § 171.7 of this subchapter). Test of type 3(c) is not required.

197 The nitrocellulose must meet the criteria of the Bergmann-Junk test or methyl violet paper test in the UN Manual of Tests and Criteria, Appendix 10 (IBR, see § 171.7 of this subchapter).

198 Nitrocellulose solutions containing not more than 20% nitrocellulose may be transported as paint, perfumery products, or printing ink, as applicable, provided the nitrocellulose contains no more 12.6% nitrogen (by dry mass). See UN1210, UN1263, UN1266, UN3066, UN3469, and UN3470.

200 Division 1.4G consumer fireworks may be certified for transportation by a DOT-approved Fireworks Certification Agency in accordance with the provisions of § 173.65 of this subchapter.

237 “Batteries, dry, containing potassium hydroxide solid, electric storage” must be prepared and packaged in accordance with the requirements of § 173.159(a) and (c). For transportation by aircraft, the provisions of § 173.159(b)(2) apply. This entry may only be used for the transport of non-activated batteries that contain dry potassium hydroxide and that are intended to be activated prior to use by the addition of an appropriate amount of water to the individual cells.

238 Neutron radiation detectors: Neutron radiation detectors containing non-pressurized boron trifluoride gas in excess of 1 gram (0.035 ounces) and radiation detection systems containing such neutron radiation detectors as components may be transported by highway, rail, vessel, or cargo aircraft in accordance with the following:

a. Each radiation detector must meet the following conditions:

(1) The pressure in each neutron radiation detector must not exceed 105 kPa absolute at 20 degreesC (68 degreesF);

(2) The amount of gas must not exceed 13 grams (0.45 ounces) per detector; and

(3) Each neutron radiation detector must be of welded metal construction with brazed metal to ceramic feed through assemblies. These detectors must have a minimum burst pressure of 1800 kPa as demonstrated by design type qualification testing; and

(4) Each detector must be tested to a 1 10-10 cm3/s leaktightness standard before filling.

b. Radiation detectors transported as individual components must be transported as follows:

(1) They must be packed in a sealed intermediate plastic liner with sufficient absorbent or adsorbent material to absorb or adsorb the entire gas contents.

(2) They must be packed in strong outer packagings and the completed package must be capable of withstanding a 1.8 meter (5.9 feet) drop without leakage of gas contents from detectors.

(3) The total amount of gas from all detectors per outer packaging must not exceed 52 grams (1.83 ounces).

c. Completed neutron radiation detection systems containing detectors meeting the conditions of paragraph a of this special provision must be transported as follows:

(1) The detectors must be contained in a strong sealed outer casing;

(2) The casing must contain include sufficient absorbent or adsorbent material to absorb or adsorb the entire gas contents;

(3) The completed system must be packed in strong outer packagings capable of withstanding a 1.8 meter (5.9 feet) drop test without leakage unless a system's outer casing affords equivalent protection.

d. Except for transportation by aircraft, neutron radiation detectors and radiation detection systems containing such detectors transported in accordance with paragraph a of this special provision are not subject to the labeling and placarding requirements of part 172 of this subchapter.

e. When transported by highway, rail, vessel, or as cargo on an aircraft, neutron radiation detectors containing not more than 1 gram of boron trifluoride, including those with solder glass joints are not subject to any other requirements of this subchapter provided they meet the requirements in paragraph a of this special provision and are packed in accordance with paragraph b of this special provision. Radiation detection systems containing such detectors are not subject to any other requirements of this subchapter provided they are packed in accordance with paragraph c of this special provision.

325 In the case of non-fissile or fissile-excepted uranium hexafluoride, the material must be classified under UN 2978.

328 When lithium metal or lithium ion batteries are contained in the fuel cell system, the item must be described under this entry and the appropriate entries for "Lithium metal batteries contained in equipment" or "Lithium ion batteries contained in equipment".

332 Magnesium nitrate hexahydrate is not subject to the requirements of this subchapter.

335 Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s," UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leakproof when used as bulk packaging.

336 The use of UN1H1 drums, UN3H1 jerricans, and UN6HA1 composite packagings which meet the requirements of Part 178 of the HMR at the Packing Group I or II performance level. These packagings are not required to: (1.) meet the venting requirements in § 173.24(g) or (2.) be marked with the hydrostatic pressure test marking specified in § 173.24a(b)(4). Shipment of packages under this special provision must be made by private or contract motor carrier. Transportation of these packages also requires the door of each van trailer to be marked with "Warning trailer may contain chemical vapor. Do not enter until vapors have dissipated." The driver of the transport vehicle and the consignee(s) must be trained not to enter the transport vehicle until the ammonia vapors have dissipated, and the emergency response information on the shipping paper must indicate that the vehicle contains ammonia vapors. This training must be documented in training records required by § 172.704(d). Transport vehicles must be vented to prevent accumulation of vapors at a poisonous or flammable concentration.

337 Authorizes the use of regulated waste containers manufactured prior to October 1, 2006 to be marked with the alternative shipping name of Regulated medical waste, UN3291 and arrows that deviate as prescribed in § 172.312(a)(2) in that they may be black or white.

338 Life Saving appliances, self-inflating transported by motor vehicle only between an U.S. Coast Guard approved inflatable life raft servicing facility and a vessel are only subject to the following requirements:

a. Prior to repacking into the life-saving appliance, an installed inflation cylinder must successfully meet and pass all inspection and test criteria and standards of the raft manufacturer and the vessel Flag State requirements for cylinders installed as part of life-saving appliances, self-inflating (UN2990) used on marine vessels. Additionally, each cylinder must be visually inspected in accordance with CGA pamphlet, CGA C-6 (incorporated by

reference, see § 171.7). A current copy of CGA pamphlet, CGA C-6 must be available at the facility servicing the life-saving appliance.

b. An installed inflation cylinder that requires recharging must be filled in accordance with § 173.301(l).

c. Every installed inflation cylinder, as associated equipment of the life-saving appliance, must be packed within the protective packaging of the life raft and the life raft itself must otherwise be in compliance with § 173.219.

d. The serial number for each cylinder must be recorded as part of the life-saving appliance service record by the U.S. Coast Guard-approved servicing facility.

340 This entry applies only to the vessel transportation of nickel-metal hydride batteries as cargo. Nickel-metal hydride button cells or nickel-metal hydride cells or batteries packed with or contained in battery-powered devices transported by vessel are not subject to the requirements of this special provision. See “Batteries, dry, sealed, n.o.s.” in the § 172.101 Hazardous Materials Table (HMT) of this part for transportation requirements for nickel-metal hydride batteries transported by other modes and for nickel-metal hydride button cells or nickel-metal hydride cells or batteries packed with or contained in battery-powered devices transported by vessel. Nickel-metal hydride batteries subject to this special provision are subject only to the following requirements: (1) The batteries must be prepared and packaged for transport in a manner to prevent a dangerous evolution of heat, short circuits, and damage to terminals; and are subject to the incident reporting in accordance with § 171.16 of this subchapter if a fire, violent rupture, explosion or dangerous evolution of heat (i.e., an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a nickel metal hydride battery; and (2) when loaded in a cargo transport unit in a total quantity of 100 kg gross mass or more, the shipping paper requirements of Subpart C of this part, the manifest requirements of § 176.30 of this subchapter, and the vessel stowage requirements assigned to this entry in Column (10) of the § 172.101 Hazardous Materials Table.

342 Glass inner packagings (such as ampoules or capsules) intended only for use in sterilization devices, when containing less than 30 mL of ethylene oxide per inner packaging with not more than 300 mL per outer packaging, may be transported in accordance with § 173.4a of this subchapter, irrespective of the restriction of § 173.4a(b) and the indication of “forbidden” in columns (9A) and (9B) of the § 172.101 table provided that:

a. After filling, each glass inner packaging must be determined to be leak-tight by placing the glass inner packaging in a hot water bath at a temperature and for a period of time sufficient to ensure that an internal pressure equal to the vapor pressure of ethylene oxide at 55° C is achieved. Any glass inner packaging showing evidence of leakage, distortion or other defect under this test must not be transported under the terms of this special provision;

b. In addition to the packaging required in § 173.4a, each glass inner packaging must be placed in a sealed plastic bag compatible with ethylene oxide and capable of containing the contents in the event of breakage or leakage of the glass inner packaging; and

c. Each glass inner packaging is protected by a means of preventing puncture of the plastic bag (e.g., sleeves or cushioning) in the event of damage to the packaging (e.g., by crushing).

343 A bulk packaging that emits hydrogen sulfide in sufficient concentration that vapors evolved from the sour crude oil can present an inhalation hazard must be marked as specified in § 172.327.

345 “Nitrogen, refrigerated liquid (cryogenic liquid), UN1977" transported in open cryogenic receptacles with a maximum capacity of 1 L are not subject to the requirements of this subchapter. The receptacles must be constructed with glass double walls having the space between the walls vacuum insulated and each receptacle must be transported in an outer packaging with sufficient cushioning and absorbent materials to protect the receptacle from damage.

346 “Nitrogen, refrigerated liquid (cryogenic liquid), UN1977" transported in accordance with the requirements for open cryogenic receptacles in § 173.320 and this special provision are not subject to any other requirements of this subchapter. The receptacle must contain no hazardous materials other than the liquid nitrogen which must be fully absorbed in a porous material in the receptacle.

347 Effective July 1, 2011, for transportation by aircraft, this entry may only be used if the results of Test series 6(d) of Part I of the UN Manual of Tests and Criteria (IBR, See § 171.7 of this subchapter) have demonstrated that any hazardous effects from accidental functioning are confined to within the package. Effective January 1, 2012, for transportation by vessel, this entry may only be used if the results of Test Series 6(d) of Part I of the UN Manual of Tests and Criteria (IBR, See § 171.7 of this subchapter) have demonstrated that any hazardous effects from accidental functioning are confined to within the package. Effective January 1, 2014, for transportation domestically by highway or rail, this entry may only be used if the results of Test Series 6(d) of Part I of the UN Manual of Tests and Criteria (IBR, See § 171.7 of this subchapter) have demonstrated that any hazardous effects from accidental functioning are confined to within the package. Testing must be performed or witnessed by a person who is approved by the Associate Administrator (See § 173.56(b) of this subchapter). All successfully conducted tests or reassignment to another compatibility group require the issuance of a new or revised approval by the Associate Administrator prior to transportation on or after the dates specified for each authorized mode of transport in this special provision.

349 Mixtures of hypochlorite with an ammonium salt are forbidden for transport. A hypochlorite solution, UN1791, is a Class 8 corrosive material.

350 Ammonium bromate, ammonium bromate aqueous solutions, and mixtures of a bromate with an ammonium salt are forbidden for transport.

351 Ammonium chlorate, ammonium chlorate aqueous solutions, and mixtures of a chlorate with an ammonium salt are forbidden for transport.

352 Ammonium chlorite, ammonium chlorite aqueous solutions, and mixtures of a chlorite with an ammonium salt are forbidden for transport.

353 Ammonium permanganate, ammonium permanganate aqueous solutions, and mixtures of a permanganate with an ammonium salt are forbidden for transport.

357 A bulk packaging that emits hydrogen sulfide in sufficient concentration that vapors evolved from the crude oil can present an inhalation hazard must be marked as specified in § 172.327 of this part.

360 Vehicles powered only by lithium batteries must be described using “UN3171, Battery-powered vehicle.” Lithium batteries installed in a cargo transport unit, designed only to provide power external to the transport unit, must be described using “UN3536, Lithium batteries installed in a cargo transport unit.”

361 Capacitors with an energy storage capacity of 0.3 Wh or less are not subject to the requirements of this subchapter. Energy storage capacity means the energy held by a capacitor, as calculated using the nominal voltage and capacitance. This entry does not apply to capacitors that by design maintain a terminal voltage (e.g., asymmetrical capacitors.)

362 This entry applies to liquids, pastes or powders, pressurized with a propellant that meets the definition of a gas in § 173.115. A chemical under pressure packaged in an aerosol dispenser must be transported under UN1950. The chemical under pressure must be classed based on the hazard characteristics of the components in the propellant; the liquid; or the solid. The following provisions also apply:

a. If one of the components, which can be a pure substance or a mixture, is classed as flammable, the chemical under pressure must be classed as flammable in Division 2.1.

Flammable components are flammable liquids and liquid mixtures, flammable solids and solid mixtures or flammable gases and gas mixtures meeting the following criteria:

(1) A flammable liquid is a liquid having a flashpoint of not more than 93° C (200° F);

(2) A flammable solid is a solid that meets the criteria in § 173.124 of this subchapter; or

(3) A flammable gas is a gas that meets the criteria in § 173.115 of this subchapter.

b. Gases of Division 2.3 and gases with a subsidiary risk of 5.1 must not be used as a propellant in a chemical under pressure.

c. Where the liquid or solid components are classed as Division 6.1, Packing Group II or III, or Class 8, Packing Group II or III, the chemical under pressure must be assigned a subsidiary risk of Division 6.1 or Class 8 and the appropriate identification number must be assigned. Components classed as Division 6.1, Packing Group I, or Class 8, Packing Group I, must not be offered for transportation and transported under this description.

d. A chemical under pressure with components meeting the properties of: Class 1 (explosives); Class 3 (liquid desensitized explosives); Division 4.1 (self-reactive substances and solid desensitized explosives); Division 4.2 (substances liable to spontaneous combustion); Division 4.3 (substances which, in contact with water, emit flammable gases or toxic gases); Division 5.1 (oxidizing substances); Division 5.2 (organic peroxides); Division 6.2 (Infectious substances); or, Class 7 (Radioactive material), must not be offered for transportation under this description.

e. A description to which special provision 170 or TP7 is assigned in Column 7 of the § 172.101 Hazardous Materials Table, and therefore requires air to be eliminated from the package vapor space by nitrogen or other means, must not be offered for transportation under this description.

f. Chemicals under pressure containing components forbidden for transport on both passenger and cargo aircraft in Columns (9A) and (9B) of the § 172.101 Hazardous Materials Table must not be transported by air.

365 For manufactured instruments and articles containing mercury, see UN3506.

367 For the purposes of documentation and package marking:

a. The proper shipping name “Paint related material” may be used for consignments of packages containing “Paint” and “Paint related material” in the same package;

b. The proper shipping name “Paint related material, corrosive, flammable” may be used for consignments of packages containing “Paint, corrosive, flammable” and “Paint related material, corrosive, flammable” in the same package;

c. The proper shipping name “Paint related material, flammable, corrosive” may be used for consignments of packages containing “Paint, flammable, corrosive” and “Paint related material, flammable, corrosive” in the same package; and

d. The proper shipping name “Printing ink related material” may be used for consignments of packages containing “Printing ink” and “Printing ink related material” in the same package.

368 In the case of non-fissile or fissile-excepted uranium hexafluoride, the material must be classified under UN3507 or UN2978.

369 In accordance with § 173.2a of this subchapter, this radioactive material in an excepted package possessing toxic and corrosive properties is classified in Division 6.1 with radioactivity and corrosive subsidiary risks. Uranium hexafluoride may be classified under this entry only if the conditions of §§ 173.420(a)(4) and (6) and (d) and 173.421(b) and (d) of this subchapter, and, for fissile-excepted material, the conditions of § 173.453 of this subchapter are met. In addition to the provisions applicable to the transport of Division 6.1 substances, the provisions of §§ 173.421(c)

and 173.443(a) of this subchapter apply. In addition, packages shall be legibly and durably marked with an identification of the consignor, the consignee, or both. No Class 7 label is required to be displayed. The consignor shall be in possession of a copy of each applicable certificate when packages include fissile material excepted by competent authority approval. When a consignment is undeliverable, the consignment shall be placed in a safe location and the appropriate competent authority shall be informed as soon as possible and a request made for instructions on further action. If it is evident that a package of radioactive material, or conveyance carrying unpackaged radioactive material, is leaking, or if it is suspected that the package, or conveyance carrying unpackaged material, may have leaked, the requirements of § 173.443(e) of this subchapter apply.

370 This entry also applies to ammonium nitrate with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any added substance, that gives a positive result when tested in accordance with Test Series 2 of the UN Manual of Tests and Criteria, Part I (IBR; see § 171.7 of this subchapter). See also UN1942 in the § 172.101 Hazardous Materials Table. This entry may not be used for ammonium nitrate for which a proper shipping name already exists in the § 172.101 Hazardous Materials Table, including ammonium nitrate mixed with fuel oil or any other commercial grade of ammonium nitrate (e.g., ammonium nitrate fertilizer).

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a. This entry also applies to articles not conforming to the requirements of §§ 173.302, 173.304, or 173.306 of this subchapter, containing a small pressure receptacle with a release device. Such articles must comply with the following requirements:

b. The manufacturer must produce technical documentation of the design type, manufacture as well as the tests and their results. The manufacturer must apply procedures to ensure that articles produced in series are made of good quality, conform to the design type and are able to meet the requirements in (a). The manufacturer must provide such information to a representative of the Department upon request.

372 This entry applies to asymmetric capacitors with an energy storage capacity greater than 0.3 Wh. Capacitors with an energy storage capacity of 0.3 Wh or less are not subject to the requirements of this subchapter.

Energy storage capacity means the energy stored in a capacitor, as calculated according to the following equation,

Wh = 1/2C[N] (U[R] <2>-U[L] <2>) x (1/3600)

Using the nominal capacitance (C[N]), rated voltage (U[R]) and the rated lower limit voltage (U[L]).

Nickel-carbon asymmetric capacitors containing Class 8 alkaline electrolytes must be transported as UN2795, Batteries, wet, filled with alkali, electric storage.

379 When offered for transport by highway, rail, or cargo vessel, anhydrous ammonia adsorbed or absorbed on a solid contained in ammonia dispensing systems or receptacles intended to form part of such systems is not subject to the requirements of this subchapter if the following conditions in this provision are met. In addition to meeting the conditions in this provision, transport on cargo aircraft only may be authorized with prior approval of the Associate Administrator.

a. The adsorption or absorption presents the following properties:

(1) The pressure at a temperature of 20° C (68° F) in the receptacle is less than 0.6 bar (60 kPa);

(2) The pressure at a temperature of 35° C (95° F) in the receptacle is less than 1 bar (100 kPa);

(3) The pressure at a temperature of 85° C (185° F) in the receptacle is less than 12 bar (1200 kPa).

b. The adsorbent or absorbent material shall not meet the definition or criteria for inclusion in Classes 1 to 8;

c. The maximum contents of a receptacle shall be 10 kg of ammonia; and

d. Receptacles containing adsorbed or absorbed ammonia shall meet the following conditions:

(1) Receptacles shall be made of a material compatible with ammonia as specified in ISO 11114-1:2012(E) and ISO 11114-1:2012/Amd 1:2017(E) (IBR, see § 171.7 of this subchapter);

(2) Receptacles and their means of closure shall be hermetically sealed and able to contain the generated ammonia;

(3) Each receptacle shall be able to withstand the pressure generated at 85° C (185° F) with a volumetric expansion no greater than 0.1%;

(4) Each receptacle shall be fitted with a device that allows for gas evacuation once pressure exceeds 15 bar (1500 kPa) without violent rupture, explosion or projection; and

(5) Each receptacle shall be able to withstand a pressure of 20 bar (2000 kPa) without leakage when the pressure relief device is deactivated.

e. When offered for transport in an ammonia dispenser, the receptacles shall be connected to the dispenser in such a way that the assembly is guaranteed to have the same strength as a single receptacle.

f. The properties of mechanical strength mentioned in this special provision shall be tested using a prototype of a receptacle and/or dispenser filled to nominal capacity, by increasing the temperature until the specified pressures are reached.

g. The test results shall be documented, shall be traceable, and shall be made available to a representative of the Department upon request.

380 For transportation by private carrier in a motor carrier only, this material is not subject to the segregation requirements of § 177.848(d) of this subchapter under the following conditions:

a. The material is packaged in a DOT Specification 4BW240 cylinder, or in a DOT-51 portable tank.

b. The material may only be loaded with Class 3, Class 8, and Division 4.1 materials in Packing Group II or III.

c. The motor carrier must maintain a satisfactory safety rating as prescribed in 49 CFR part 385.

381 For railroad flagging kits, see § 173.184 (c) of this subchapter.

382 Packages containing toy plastic or paper caps for toy pistols described as “UN0349, Articles, explosive, n.o.s. (Toy caps), 1.4S” or “NA0337, Toy caps, 1.4S” are not subject to the subpart E (labeling) requirements of this part when offered for transportation by motor vehicle, rail freight, cargo vessel, and cargo aircraft and, notwithstanding the packing method assigned in § 173.62 of this subchapter, in conformance with the following conditions:

a. The toy plastic or paper caps must be in the form of sheets, strips, rolls, or individual caps;

b. The caps must not contain more than an average of twenty-five hundredths of a grain of explosive composition per cap;

c. The caps must be packed inside packagings constructed of cardboard not less than 0.013-inch in thickness, metal not less than 0.008-inch in thickness, non-combustible plastic not less

than 0.015-inch in thickness, or a composite blister package consisting of cardboard not less than 0.013-inch in thickness and non-combustible plastic not less than 0.005-inch in thickness that completely encloses the caps;

d. The minimum dimensions of each side and each end of the cardboard packaging must be 1/8th inch in height or more;

e. The number of caps inside each packaging must be limited so that not more than 10 grains of explosives composition may be packed into one cubic inch of space, and not more than 17.5 grains of the explosive composition of toy caps may be packed in any inner packaging;

f. Inner packagings must be packed in outer packagings meeting PG II performance criteria;

g. Toy caps may be packed with non-explosive or non-flammable articles provided the outer packagings are marked as prescribed in this paragraph;

h. Toy paper caps of any kind must not be packed in the same packaging with fireworks;

i. The outside of each package must be plainly marked “ARTICLES, EXPLOSIVES, N.O.S. (TOY CAPS) — HANDLE CAREFULLY” OR “TOY CAPS — HANDLE CAREFULLY”; and

j. Explosives shipped in conformance with this paragraph must have been examined in accordance with § 173.56 of this subchapter and approved by the Associate Administrator.

383 For transportation by motor vehicle, substances meeting the conditions for high viscosity flammable liquids as prescribed in § 173.121(b)(1)(i), (b)(1)(ii), and (b)(1)(iv) of this subchapter, may be reassigned to Packing Group III under the following conditions:

a. Packaging must be UN standard metal drums attached with heavy duty steel strapping to a pallet; and

b. The capacity of each drum must not exceed 220 L (58 gallons).

384 For green graphite electrodes and shapes that are large single component solid objects not subject to shifting, transport in open rail flat cars, open bed motor vehicles, and intermodal containers is also authorized. The objects must be secured to the flat car, motor vehicle, intermodal container, or unitized by steel banding to wooden runners or pallets and the units secured to the flat car, motor vehicle, or freight container to prevent shifting, including relative motion between the objects, under conditions normally incident to transportation. Stacking is permitted two or more levels high to achieve maximum allowable utilization of the designated vehicle, rail car weight, or intermodal freight container weight or vessel hold volume.

385 Notwithstanding the provisions of § 177.834(l) of this subchapter, cargo heaters may be used when weather conditions are such that the freezing of a wetted explosive material is likely. Shipments must be made by private, leased or contract carrier vehicles under exclusive use of the offeror. Cargo heaters must be reverse refrigeration (heat pump) units. Shipments made in accordance with this Special provision are excepted from the requirements of § 173.60(b)(4) of this subchapter.

386 When transported by private motor carrier only, the following corrosive liquids may be packaged in polyethylene bottles with a capacity no greater than 3.785 L (one gallon), further packed inside an open-top, heavy wall, high density polyethylene box (i.e., crate) in a manner that the polyethylene bottles are not subjected to any superimposed weight, and the boxes must be reasonably secured against shifting within the transport vehicle and loaded so as to minimize the possibility of coming in contact with other lading:

Compounds, cleaning liquid, NA1760, PG II or III;

Corrosive liquid, acidic, inorganic, n.o.s., UN3264, PG II;

Corrosive liquid, acidic, organic, n.o.s., UN 3265, PG III;

Corrosive liquid, basic, inorganic, n.o.s., UN3266, PG II;

Hypochlorite solutions, UN1791, PG III;

Hydrochloric acid solution, UN 1789, PG II; and

Sulfuric acid, UN2796, PG II.

a. No more than four bottles, securely closed with threaded caps, may be packed in each box.

b. Each empty bottle must have a minimum weight of not less than 140 grams and a minimum wall thickness of not less than 0.020 inch (0.508 mm).

c. The completed package must meet the Packing Group II performance level, as applicable for combination packagings with a plastic box outer packaging, in accordance with subpart M of part 178 of this subchapter.

(i) Tests must be performed on each type and size of bottle, for each manufacturing location. Samples taken at random must withstand the prescribed tests without breakage or leakage.

(ii) One bottle for every two hours of production, or for every 2,500 bottles produced, must be tested by dropping a bottle filled to 98 percent capacity with water from a height of 1.2 meters (3.9 feet) onto solid concrete directly on the closure.

(iii) A copy of the test results must be kept on file at each facility where packagings are offered for transportation, and must be made available to a representative of the Department upon request.

(iv) The name or symbol of the bottle producer, and the month and year of manufacture, must be marked by embossing, ink-jet printing of permanent ink, or other permanent means on the face or bottom of each bottle, in letters and numbers at least 6 mm (0.2 inch) high. Symbols, if used, must be registered with the Associate Administrator.

(v) The box must be constructed from high-density polyethylene in the density range 0.950-0.962, and be capable of holding liquid when in the upright position.

387 When materials are stabilized by temperature control, the provisions of § 173.21(f) of this subchapter apply. When chemical stabilization is employed, the person offering the material for transport shall ensure that the level of stabilization is sufficient to prevent the material as packaged from dangerous polymerization at 50 degreesC (122 degreesF). If chemical stabilization becomes ineffective at lower temperatures within the anticipated duration of transport, temperature control is required and is forbidden by aircraft. In making this determination factors to be taken into consideration include, but are not limited to, the capacity and geometry of the packaging and the effect of any insulation present, the temperature of the material when offered for transport, the duration of the journey, and the ambient temperature conditions typically encountered in the journey (considering also the season of year), the effectiveness and other properties of the stabilizer employed, applicable operational controls imposed by regulation (e.g., requirements to protect from sources of heat, including other cargo carried at a temperature above ambient) and any other relevant factors. The provisions of this special provision will be effective until January 2, 2023, unless we terminate them earlier or extend them beyond that date by notice of a final rule in the Federal Register.

388 Lithium batteries containing both primary lithium metal cells and rechargeable lithium ion cells that are not designed to be externally charged, must meet the following conditions:

(a)

i. The rechargeable lithium ion cells can only be charged from the primary lithium metal cells;

ii. Overcharge of the rechargeable lithium ion cells is precluded by design;

iii. The battery has been tested as a primary lithium battery; and

iv. Component cells of the battery must be of a type proved to meet the respective testing requirements of the Manual of Tests and Criteria, part III, subsection 38.3 (IBR, see § 171.7 of this subchapter).

b. Lithium batteries conforming to paragraph a. of this special provision must be assigned to UN Nos. 3090 or 3091, as appropriate. When such batteries are transported in accordance with § 173.185(c), the total lithium content of all lithium metal cells contained in the battery must not exceed 1.5 g and the total capacity of all lithium ion cells contained in the battery must not exceed 10 Wh.

389 This entry only applies to lithium ion batteries or lithium metal batteries installed in a cargo transport unit and designed only to provide power external to the cargo transport unit. The lithium batteries must meet the requirements of § 173.185(a) and contain the necessary systems to prevent overcharge and over discharge between the batteries. The batteries must be securely attached to the interior structure of the cargo transport unit (e.g., by means of placement in racks, cabinets, etc.) in such a manner as to prevent short circuits, accidental operation, and significant movement relative to the cargo transport unit under the shocks, loadings, and vibrations normally incident to transport. Hazardous materials necessary for the safe and proper operation of the cargo transport unit (e.g., fire extinguishing systems and air conditioning systems), must be properly secured to or installed in the cargo transport unit and are not otherwise subject to this subchapter. Hazardous materials not necessary for the safe and proper operation of the cargo transport unit must not be transported within the cargo transport unit. The batteries inside the cargo transport unit are not subject to marking or labelling requirements of part 172 subparts D and E of this subchapter. The cargo transport unit shall display the UN number in a manner in accordance with § 172.332 of this subchapter and be placarded on two opposing sides. For transportation by aircraft, cargo transport units may only be offered for transportation and transported under conditions approved by the Associate Administrator.

391 Except for articles being transported by motor vehicle as a material of trade in accordance with § 173.6 of this subchapter, articles containing hazardous materials of Division 2.3, or Division 4.2, or Division 4.3, or Division 5.1, or Division 5.2, or Division 6.1 (substances with an inhalation toxicity of Packing Group I) and articles containing more than one of the following hazards: (1) Gases of Class 2; (2) Liquid desensitized explosives of Class 3; or (3) Self-reactive substances and solid desensitized explosives of Division 4.1, may only be offered for transportation and transported under conditions approved by the Associate Administrator.

420 This entry does not apply to manufactured articles (such as table tennis balls).

421 This entry will no longer be effective on January 2, 2023, unless we terminate it earlier or extend it beyond that date by notice of a final rule in the Federal Register.

422 When labelling is required, the label to be used must be the label shown in § 172.447. When a placard is displayed, the placard must be the placard shown in § 172.560.

430 This entry shall only be used for solid medical waste of Category A transported for disposal.

439 UN1972 is not authorized for transportation by rail tank car until either issuance of a final rule concluding the rulemaking action proceeding under RIN 2137–AF54, or June 30, 2025, whichever occurs first. For information and the status of RIN 2137–AF54, please refer to the Office of Management and Budget's Office of Information and Regulatory Affairs at www.reginfo.gov.

440 When this material is transported by tank car, the offeror must ensure each tank car is remotely monitored for pressure and location. Additionally, the offeror must notify the carrier if the tank pressure rise exceeds 3 psig over any 24- hour period.

441 For marine pollutants transported under “UN3077, Environmentally hazardous substance, solid, n.o.s.” or “UN3082, Environmentally hazardous substance, liquid, n.o.s.” and for purposes of shipping paper and package marking requirements, the technical name used in association with the basic description may be a proper shipping name listed in the § 172.101 Hazardous Material Table; provided that the name chosen is not also an entry that includes “n.o.s.” as a part of the name or one that has a “G” in column (1) of the table.

(2) “A” codes. These provisions apply only to transportation by aircraft:

Code/Special Provisions

A1 Single packagings are not permitted on passenger aircraft.

A2 Single packagings are not permitted on aircraft.

A3 For combination packagings, if glass inner packagings (including ampoules) are used, they must be packed with absorbent material in tightly closed rigid and leakproof receptacles before packing in outer packagings.

A4 Liquids having an inhalation toxicity of Packing Group I are not permitted on aircraft.

A5 Solids having an inhalation toxicity of Packing Group I are not permitted on passenger aircraft and may not exceed a maximum net quantity per package of 15 kg (33 pounds) on cargo aircraft.

A6 For combination packagings, if plastic inner packagings are used, they must be packed in tightly closed metal receptacles before packing in outer packagings.

A7 Steel packagings must be corrosion-resistant or have protection against corrosion.

A8 For combination packagings, if glass inner packagings (including ampoules) are used, they must be packed with cushioning material in tightly closed metal receptacles before packing in outer packagings.

A9 For combination packagings, if plastic bags are used, they must be packed in tightly closed metal receptacles before packing in outer packagings.

A10 When aluminum or aluminum alloy construction materials are used, they must be resistant to corrosion.

A11 For combination packagings, when metal inner packagings are permitted, only specification cylinders constructed of metals which are compatible with the hazardous material may be used.

A13 Bulk packagings are not authorized for transportation by aircraft.

A14 This material is not authorized to be transported as a limited quantity or consumer commodity in accordance with § 173.306 of this subchapter when transported aboard an aircraft.

A19 Combination packagings consisting of outer fiber drums or plywood drums, with inner plastic packagings, are not authorized for transportation by aircraft.

A20 Plastic bags as inner receptacles of combination packagings are not authorized for transportation by aircraft.

A29 Combination packagings consisting of outer expanded plastic boxes with inner plastic bags are not authorized for transportation by aircraft.

A30 Ammonium permanganate is not authorized for transportation on aircraft.

A34 Aerosols containing a corrosive liquid in Packing Group II charged with a gas are not permitted for transportation by aircraft.

A35 This includes any material which is not covered by any of the other classes but which has an anesthetic, narcotic, noxious or other similar properties such that, in the event of spillage or

leakage on an aircraft, extreme annoyance or discomfort could be caused to crew members so as to prevent the correct performance of assigned duties.

A37 This entry applies only to a material meeting the definition in § 171.8 of this subchapter for self-defense spray.

A51 For aircraft batteries, irrespective of the quantity limitations specified in Column (9A) of the § 172.101 Table or § 175.75(c), wet cell batteries, UN2794 or UN2795, up to a limit of 100 kg net mass per package may be transported aboard passenger aircraft. Transport in accordance with this special provision must be noted on the shipping paper.

a. Wet cell batteries, UN 2794 or UN 2795, up to a limit of 100kg net mass per package;

b. Lithium ion batteries, UN 3480, packages containing a single aircraft battery with a net mass not exceeding 35kg; and

c. Transport in accordance with this special provision must be noted on the shipping paper.

A53 Refrigerating machines and refrigerating machine components are not subject to the requirements of this subchapter when containing less than 12 kg (26.4 pounds) of a non-flammable gas or when containing 12 L (3 gallons) or less of ammonia solution (UN2672) (see § 173.307 of this subchapter).

A54 Irrespective of the quantity limits in Column 9B of the § 172.101 table, a lithium battery, including a lithium battery packed with, or contained in, equipment that otherwise meets the applicable requirements of § 173.185, may have a mass exceeding 35 kg if approved by the Associate Administrator prior to shipment.

A56 Radioactive material with a subsidiary hazard of Division 4.2, Packing Group I, must be transported in Type B packages when offered for transportation by aircraft. Where the subsidiary hazard material is “Forbidden” in column (9A) or (9B) of the § 172.101 Table, the radioactive material may only be offered for transportation and transported by aircraft under conditions approved by the Associate Administrator.

A60 Sterilization devices, when containing less than 30 mL per inner packaging with not more than 150 mL per outer packaging, may be transported in accordance with the provisions in § 173.4a, irrespective of § 173.4a(b), provided such packagings were first subjected to comparative fire testing. Comparative fire testing between a package as prepared for transport (including the substance to be transported) and an identical package filled with water must show that the maximum temperature measured inside the packages during testing does not differ by more than 200 [degrees] C (392 [degrees] F). Packagings may include a vent to permit the slow escape of gas (i.e. not more than 0.1 mL/hour per 30 mL inner packaging at 20 [degrees] C (68 [degrees] F) produced from gradual decomposition. The requirements of §§ 173.24(g)(1) and 173.27(c) do not apply.

A61

a. When used for purposes such as sterilization, inner packagings of peroxyacetic acid, stabilized, classified as UN 3107 Organic peroxide type E, liquid or UN 3109 Organic peroxide type F, liquid may be fitted with a vent consisting of hydrophobic membrane, provided:

(1) Each inner packaging contains not more than 70 mL;

(2) The inner packaging is designed so that the vent is not immersed in liquid in any orientation;

(3) Each inner packaging is enclosed in an intermediate rigid plastic packaging with a small opening to permit release of gas and contains a buffer that neutralizes the contents of the inner packaging in the event of leakage;

(4) Intermediate packagings are packed in a fiberboard box (4G) outer packaging;

(5) Each outer packaging contains not more than 1.4 L of liquid; and

(6) The rate of oxygen release from the outer packaging does not exceed 15 mL per hour.

b. Such packages must be transported on cargo aircraft only. The requirements of §§ 173.24(g)(1) and 173.27(c) do not apply.

A82 The quantity limits in columns (9A) and (9B) do not apply to human or animal body parts, whole organs or whole bodies known to contain or suspected of containing an infectious substance.

A100 Lithium ion cells and batteries must be offered for transport at a state of charge not exceeding 30 percent of their rated capacity. Lithium ion cells and batteries at a state of charge greater than 30 percent of their rated capacity may only be transported under conditions approved by the Associate Administrator in accordance with the requirements in 49 CFR part 107, subpart H. Guidance and methodology for determining the rated capacity can be found in sub-section 38.3.2.3 of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

A101 In addition to the applicable requirements of § 173.185, the quantity of lithium metal in the batteries contained in any piece of equipment must not exceed 12 g per cell and 500 g per battery.

A105

a. This entry applies to machinery or apparatus containing hazardous materials as a residue or as an integral element of the machinery or apparatus. It must not be used for machinery or apparatus for which a proper shipping name already exists in the § 172.101 Table.

b. Where the quantity of hazardous materials contained as an integral element in machinery or apparatus exceeds the limits permitted by § 173.222(c)(2), and the hazardous materials meet the provisions of § 173.222(c), the machinery or apparatus may be transported by aircraft only with the prior approval of the Associate Administrator.

a. 1 kg (2.2 pounds) in the case of solids;

b. 0.5 L (0.1 gallons) in the case of liquids;

c. 0.5 kg (1.1 pounds) in the case of Division 2.2 gases; or

d. any combination thereof.

A112 Notwithstanding the quantity limits shown in Column (9A) and (9B) for this entry, the following IBCs are authorized for transportation aboard passenger and cargo-only aircraft. Each IBC may not exceed a maximum net quantity of 1,000 kg:

a. Metal: 11A, 11B, 11N, 21A, 21B and 21N

b. Rigid plastics: 11H1, 11H2, 21H1 and 21H2

c. Composite with plastic inner receptacle: 11HZ1, 11HZ2, 21HZ1 and 21HZ2

d. Fiberboard: 11G

e. Wooden: 11C, 11D and 11F (with inner liners)

f. Flexible: 13H2, 13H3, 13H4, 13H5, 13L2, 13L3, 13L4, 13M1 and 13M2 (flexible IBCs must be sift-proof and water resistant or must be fitted with a sift-proof and water resistant liner).

A189 Except where the defining criteria of another class or division are met, concentrations of formaldehyde solution:

a. With less than 25 percent but not less than 10 percent formaldehyde, must be described as UN3334, Aviation regulated liquid, n.o.s.; and

b. With less than 10 percent formaldehyde, are not subject to this subchapter.

A191 Notwithstanding the Division 6.1 subsidiary risk for this description, the toxic subsidiary risk label and the requirement to indicate the subsidiary risk on the shipping paper are not required for manufactured articles containing less than 5 kg (11 pounds) of mercury.

A200 These articles must be transported as cargo and may not be carried aboard an aircraft by passengers or crewmembers in carry-on baggage, checked baggage, or on their person unless specifically authorized in § 175.10.

A210 This substance is forbidden for transport by air. It may be transported on cargo aircraft only with the prior approval of the Associate Administrator.

A212 "UN 2031, Nitric acid , other than red fuming, with more than 20% and less than 65% nitric acid" intended for use in sterilization devices only, may be transported on passenger aircraft irrespective of the indication of "forbidden" in columns (9A) of the § 172.101 table provided that:

a. Each inner packaging contains not more than 30 mL;

b. Each inner packaging is contained in a sealed leak-proof intermediate packaging with sufficient absorbent material capable of containing the contents of the inner packaging;

c. Intermediate packagings are securely packed in an outer packaging of a type permitted by § 173.158(g) of this subchapter which meet the requirements of part 178 of this subchapter at the Packing Group I performance level;

d. The maximum quantity of nitric acid in the package does not exceed 300 mL; and

e. Transport in accordance with this special provision must be noted on the shipping paper.

(3) "B" codes. These provisions apply only to bulk packagings. Except as otherwise provided in this subchapter, these special provisions do not apply to UN portable tanks or IBCs:

Code/Special Provisions

B1 If the material has a flash point at or above 38 [degrees]C (100 [degrees]F) and below 93 [degrees]C (200 [degrees]F), then the bulk packaging requirements of § 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 [degrees]C (100 [degrees]F), then the bulk packaging requirements of § 173.242 of this subchapter are applicable.

B2 MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.

B3 MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks and DOT 57 portable tanks are not authorized.

B4 MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.

B5 Only ammonium nitrate solutions with 35 percent or less water that will remain completely in solution under all conditions of transport at a maximum lading temperature of 116 [degrees]C (240 [degrees]F) are authorized for transport in the following bulk packagings: MC 307, MC 312, DOT 407 and DOT 412 cargo tanks with at least 172 kPa (25 psig) design pressure. The packaging shall be designed for a working temperature of at least 121 [degrees]C (250 [degrees]F). Only Specifications MC 304, MC 307 or DOT 407 cargo tank motor vehicles are authorized for transportation by vessel.

B6 Packagings shall be made of steel.

B7 Safety relief devices are not authorized on multi-unit tank car tanks. Openings for safety relief devices on multi-unit tank car tanks shall be plugged or blank flanged.

B8 Packagings shall be made of nickel, stainless steel, or steel with nickel, stainless steel, lead or other suitable corrosion resistant metallic lining.

B9 Bottom outlets are not authorized.

B10 MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks, and DOT 57 portable tanks are not authorized.

B11 Tank car tanks must have a test pressure of at least 2,068.5 kPa (300 psig). Cargo and portable tanks must have a design pressure of at least 1,207 kPa (175 psig).

B13 A nonspecification cargo tank motor vehicle authorized in § 173.247 of this subchapter must be at least equivalent in design and in construction to a DOT 406 cargo tank or MC 306 cargo tank (if constructed before August 31, 1995), except as follows:

a. Packagings equivalent to MC 306 cargo tanks are excepted from the certification, venting, and emergency flow requirements of the MC 306 specification.

b. Packagings equivalent to DOT 406 cargo tanks are excepted from §§ 178.345-7(d)(5), circumferential reinforcements; 178.345-10, pressure relief; 178.345-11, outlets; 178.345-14, marking, and 178.345-15, certification.

c. Packagings are excepted from the design stress limits at elevated temperatures, as described in Section VIII of the ASME Code (IBR, see § 171.7 of this subchapter). However, the design stress limits may not exceed 25 percent of the stress for 0 temper at the maximum design temperature of the cargo tank, as specified in the Aluminum Association's "Aluminum Standards and Data" (IBR, see § 171.7 of this subchapter).

B14 Each bulk packaging, except a tank car or a multi-unit-tank car tank, must be insulated with an insulating material so that the overall thermal conductance at 15.5 [degrees]C (60[degrees]F) is no more than 1.5333 kilojoules per hour per square meter per degree Celsius (0.075 Btu per hour per square foot per degree Fahrenheit) temperature differential. Insulating materials must not promote corrosion to steel when wet.

B15 Packagings must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance.

B16 The lading must be completely covered with nitrogen, inert gas or other inert materials.

B18 Open steel hoppers or bins are authorized.

B23 Tanks must be made of steel that is rubber lined or unlined. Unlined tanks must be passivated before being placed in service. If unlined tanks are washed out with water, they must be repassivated prior to return to service. Lading in unlined tanks must be inhibited so that the corrosive effect on steel is not greater than that of hydrofluoric acid of 65 percent concentration.

B25 Packagings must be made from monel or nickel or monel-lined or nickel-lined steel.

B26 Tanks must be insulated. Insulation must be at least 100 mm (3.9 inches) except that the insulation thickness may be reduced to 51 mm (2 inches) over the exterior heater coils. Interior heating coils are not authorized. The packaging may not be loaded with a material outside of the packaging's design temperature range. In addition, the material also must be covered with an inert gas or the container must be filled with water to the tank's capacity. After unloading, the residual material also must be covered with an inert gas or the container must be filled with water to the tank's capacity.

B27 Tanks must have a service pressure of 1,034 kPa (150 psig). Tank car tanks must have a test pressure rating of 1,379 kPa (200 psig). Lading must be blanketed at all times with a dry inert gas at a pressure not to exceed 103 kPa (15 psig).

B28 Packagings must be made of stainless steel.

B30 MC 312, MC 330, MC 331 and DOT 412 cargo tanks and DOT 51 portable tanks must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of § 173.24b(b) of this subchapter. Thickness of stainless steel for tank shell and heads for cargo tanks and portable tanks must be the greater of 7.62 mm (0.300 inch) or the thickness required

for a tank with a design pressure at least equal to 1.5 times the vapor pressure of the lading at 46 [degrees]C (115 [degrees]F). In addition, MC 312 and DOT 412 cargo tank motor vehicles must:

a. Be ASME Code (U) stamped for 100% radiography of all pressure-retaining welds;

b. Have accident damage protection which conforms with § 178.345-8 of this subchapter;

c. Have a MAWP or design pressure of at least 87 psig; and

d. Have a bolted manway cover.

B32 MC 312, MC 330, MC 331, DOT 412 cargo tanks and DOT 51 portable tanks must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of § 173.24b(b) of this subchapter. Thickness of stainless steel for tank shell and heads for cargo tanks and portable tanks must be the greater of 6.35 mm (0.250 inch) or the thickness required for a tank with a design pressure at least equal to 1.3 times the vapor pressure of the lading at 46 [degrees]C (115 [degrees]F). In addition, MC 312 and DOT 412 cargo tank motor vehicles must:

a. Be ASME Code (U) stamped for 100% radiography of all pressure-retaining welds;

b. Have accident damage protection which conforms with § 178.345-8 of this subchapter;

c. Have MAWP or design pressure of at least 87 psig; and

d. Have a bolted manway cover.

B33 MC 300, MC 301, MC 302, MC 303, MC 305, MC 306, and DOT 406 cargo tanks equipped with a 1 psig normal vent used to transport gasoline must conform to Table I of this Special Provision. Based on the volatility class determined by using ASTM D 439 and the Reid vapor pressure (RVP) of the particular gasoline, the maximum lading pressure and maximum ambient temperature permitted during the loading of gasoline may not exceed that listed in Table I.

TABLE I — MAXIMUM AMBIENT TEMPERATURE — GASOLINE

ASTM D439 volatility class	**Maximum lading and ambient temperature (see note 1)**
A (RVP <= 9.0 psia)	131°F
B (RVP <= 10.0 psia)	124°F
C (RVP <= 11.5 psia)	116°F
D (RVP <= 13.5 psia)	107°F
E (RVP <= 15.0 psia)	100°F

Note 1: Based on maximum lading pressure of 1 psig at top of cargo tank.

B35 Tank cars containing hydrogen cyanide may be alternatively marked “Hydrocyanic acid, liquefied” if otherwise conforming to marking requirements in subpart D of this part. Tank cars marked “HYDROCYANIC ACID” prior to October 1, 1991 do not need to be remarked.

B42 Tank cars constructed before March 16, 2009, must have a test pressure of 34.47 Bar (500 psig) or greater and conform to Class 105J. Each tank car must have a reclosing pressure relief device having a start-to-discharge pressure of 10.34 Bar (150 psig). The tank car specification may be marked to indicate a test pressure of 13.79 Bar (200 psig).

B44 All parts of valves and safety relief devices in contact with lading must be of a material which will not cause formation of acetylides.

B45 Each tank must have a reclosing combination pressure relief device equipped with stainless steel or platinum rupture discs approved by the AAR Tank Car Committee.

B46 The detachable protective housing for the loading and unloading valves of multi-unit tank car tanks must withstand tank test pressure and must be approved by the Associate Administrator.

B47 Each tank may have a reclosing pressure relief device having a start-to-discharge pressure setting of 310 kPa (45 psig).

B48 Portable tanks in sodium metal service may be visually inspected at least once every 5 years instead of being retested hydrostatically. Date of the visual inspection must be stenciled on the tank near the other required markings.

B49 Tanks equipped with interior heater coils are not authorized. Single unit tank car tanks must have a reclosing pressure relief device having a start-to-discharge pressure set at no more than 1551 kPa (225 psig).

B52 Notwithstanding the provisions of § 173.24b of this subchapter, non-reclosing pressure relief devices are authorized on DOT 57 portable tanks.

B53 Packagings must be made of either aluminum or steel.

B54 Open-top, sift-proof rail cars are also authorized.

B55 Water-tight, sift-proof, closed-top, metal-covered hopper cars, equipped with a venting arrangement (including flame arrestors) approved by the Associate Administrator are also authorized.

B56 Water-tight, sift-proof, closed-top, metal-covered hopper cars are also authorized if the particle size of the hazardous material is not less than 149 microns.

B57 Class 115A tank car tanks used to transport chloroprene must be equipped with a non-reclosing pressure relief device of a diameter not less than 305 mm (12 inches) with a maximum rupture disc burst pressure of 310 kPa (45 psig).

B59 Water-tight, sift-proof, closed-top, metal-covered hopper cars are also authorized provided that the lading is covered with a nitrogen blanket.

B61 Written procedures covering details of tank car appurtenances, dome fittings, safety devices, and marking, loading, handling, inspection, and testing practices must be approved by the Associate Administrator before any single unit tank car tank is offered for transportation.

B65 Tank cars constructed before March 16, 2009, must have a test pressure of 34.47 Bar (500 psig) or greater and conform to Class 105A. Each tank car must have a reclosing pressure relief device having a start-to-discharge pressure of 15.51 Bar (225 psig). The tank car specification may be marked to indicate a test pressure of 20.68 Bar (300 psig).

B66 Each tank must be equipped with gas tight valve protection caps. Outage must be sufficient to prevent tanks from becoming liquid full at 55 [degrees]C (130 [degrees]F). Specification 110A500W tanks must be stainless steel.

B67 All valves and fittings must be protected by a securely attached cover made of metal not subject to deterioration by the lading, and all valve openings, except safety valve, must be fitted with screw plugs or caps to prevent leakage in the event of valve failure.

B68 Sodium must be in a molten condition when loaded and allowed to solidify before shipment. Outage must be at least 5 percent at 98 [degrees]C (208 [degrees]F). Bulk packagings must have exterior heating coils fusion welded to the tank shell which have been properly stress relieved. The only tank car tanks authorized are Class DOT 105 tank cars having a test pressure of 2,069 kPa (300 psig) or greater.

B69 Dry sodium cyanide or potassium cyanide may be shipped in the following sift-proof and weather-resistant packagings: metal covered hopper cars, covered motor vehicles, portable tanks, or non-specification bins.

B70 If DOT 103ANW tank car tank is used: All cast metal in contact with the lading must have 96.7 percent nickel content; and the lading must be anhydrous and free from any impurities.

B76 Tank cars constructed before March 16, 2009, must have a test pressure of 20.68 Bar (300 psig) or greater and conform to Class 105S, 112J, 114J or 120S. Each tank car must have a reclosing pressure relief device having a start-to-discharge pressure of 10.34 Bar (150 psig). The tank car specification may be marked to indicate a test pressure of 13.79 Bar (200 psig).

B77 Other packaging are authorized when approved by the Associate Administrator.

B78 Tank cars must have a test pressure of 4.14 Bar (60 psig) or greater and conform to Class 103, 104, 105, 109, 111, 112, 114 or 120. Heater pipes must be of welded construction designed for a test pressure of 500 pounds per square inch. A 25 mm (1 inch) woven lining of asbestos or other approved material must be placed between the bolster slabbing and the bottom of the tank. If a tank car tank is equipped with a non-reclosing pressure relief device, the rupture disc must be perforated with a 3.2 mm (0.13 inch) diameter hole. If a tank car tank is equipped with a reclosing pressure relief valve, the tank must also be equipped with a vacuum relief valve.

B80 Each cargo tank must have a minimum design pressure of 276 kPa (40 psig).

B81 Venting and pressure relief devices for tank car tanks and cargo tanks must be approved by the Associate Administrator.

B82 Cargo tanks and portable tanks are not authorized.

B83 Bottom outlets are prohibited on tank car tanks transporting sulfuric acid in concentrations over 65.25 percent.

B84 Packagings must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance for sulfuric acid or spent sulfuric acid in concentration up to 65.25 percent.

B85 Cargo tanks must be marked with the name of the lading in accordance with the requirements of § 172.302(b).

B90 Steel tanks conforming or equivalent to ASME specifications which contain solid or semisolid residual motor fuel antiknock mixture (including rust, scale, or other contaminants) may be shipped by rail freight or highway. The tank must have been designed and constructed to be capable of withstanding full vacuum. All openings must be closed with gasketed blank flanges or vapor tight threaded closures.

B115 Rail cars, highway trailers, roll-on/roll-off bins, or other non-specification bulk packagings are authorized. Packagings must be sift-proof, prevent liquid water from reaching the hazardous material, and be provided with sufficient venting to preclude dangerous accumulation of flammable, corrosive, or toxic gaseous emissions such as methane, hydrogen, and ammonia. The material must be loaded dry.

B116 The use of non specification, sift-proof dump or hopper type vehicles, and sift-proof roll-on/roll-off bulk bins, which must be covered by a tarpaulin, metal cover, or equivalent means is authorized for the transportation of spent bleaching earth by motor vehicle. The material is also be subject to operational controls which include not exceeding a temperature of 55C (130F) at the time it is offered or during transportation, not exceeding a transportation time of 24 hours, and drivers transporting spent

bleaching earth must be trained in the properties and hazards of the spent bleaching earth. This training must be documented in training records required by § 172.704(d).

B120 The use of flexible bulk containers conforming to the requirements in subpart R and subpart S of part 178 of this subchapter is permitted.

B130 When transported by motor vehicle, used diatomaceous earth filter material is not subject to any other requirements of this subchapter except for the shipping paper requirements of subpart C of part 172 of this subchapter; emergency response information as required by § 172.602(a)(2) through (a)(7) of this subchapter; and the marking requirements of § 172.302 of this subchapter, if the following requirements are met:

a. Packagings are non-DOT specification sift-proof motor vehicles or sift-proof roll-on/roll-off bulk bins, which are covered by a tarpaulin or other equivalent means.

b. The temperature of the material at the time it is offered for transport and during transportation may not exceed 55 [degrees] C (130 [degrees] F).

c. The time between offering the material for transportation at the point of origin, and unloading the material at the destination does not exceed 48 hours.

d. In addition to the training requirements prescribed in §§ 172.700 through 172.704, each driver must be trained regarding the properties and hazards of diatomaceous earth filter material, precautions to ensure safe transport of the material, and actions to be taken in the event of an emergency during transportation, or a substantial delay in transit.

B131 When transported by highway, rail, or cargo vessel, waste Paint and Paint related material (UN1263; PG II and PG III), when in plastic or metal inner packagings of not more than 26.5 L (7 gallons), are excepted from the marking requirements in § 172.301(a) and (c) and the labeling requirements in § 172.400(a), when further packed in the following specification and nonspecification bulk outer packagings and under the following conditions:

a. Primary receptacles must conform to the general packaging requirements of subpart B of part 173 of this subchapter and may not leak. If they do leak, they must be overpacked in packagings conforming to the specification requirements of part 178 of this subchapter or in salvage packagings conforming to the requirements in § 173.12 of this subchapter.

b. Primary receptacles must be further packed in non-specification bulk outer packagings such as cubic yard boxes, plastic rigid-wall bulk containers, dump trailers, and roll-off containers. Bulk outer packagings must be liquid tight through design or by the use of lining materials.

c. Primary receptacles may also be further packed in specification bulk outer packagings. Authorized specification bulk outer packagings are UN11G fiberboard intermediate bulk containers (IBC) and UN13H4 woven plastic, coated and with liner flexible intermediate bulk containers (FIBCs) meeting the Packing Group II performance level and lined with a plastic liner of at least 6 mil thickness.

d. All inner packagings placed inside bulk outer packagings must be blocked and braced to prevent shifting during transportation that could cause the container to open or fall over. Specification IBCs and FIBCs are to be secured to a pallet.

B132 Except for transportation by aircraft, UN2813, Water reactive solid, n.o.s. (contains magnesium, magnesium nitrides) in PG II or III may be packaged in sift-proof bulk packagings that prevent liquid from reaching the hazardous material with sufficient venting to preclude dangerous accumulation of flammable, corrosive or toxic gaseous emissions such as methane, hydrogen and ammonia.

B133 Hydrochloric acid concentration not exceeding 38%, in Packing Group II, is authorized to be packaged in UN31H1 or UN31HH1 intermediate bulk containers when loaded in accordance with the requirements of § 173.35(h) of this subchapter.

B134 For Large Packagings offered for transport by vessel, flexible or fibre inner packagings shall be sift-proof and water-resistant or shall be fitted with a sift-proof and water-resistant liner.

B135 For Large Packagings offered for transport by vessel, flexible or fibre inner packagings shall be hermetically sealed.

B136 Non-specification closed bulk bins are authorized.

(4) IB Codes and IP Codes. These provisions apply only to transportation in IBCs and Large Packagings. Table 1 authorizes IBCs for specific proper shipping names through the use of IB Codes assigned in the § 172.101 table of this subchapter. Table 2 defines IP Codes on the use of IBCs that are assigned to specific commodities in the § 172.101 Table of this subchapter. Table 3 authorizes Large Packagings for specific proper shipping names through the use of IB Codes assigned in the § 172.101 table of this subchapter. Large Packagings are authorized for the Packing Group III entries of specific proper shipping names when either special provision IB3 or IB8 is assigned to that entry in the § 172.101 Table. When no IB code is assigned in the § 172.101 Table for a specific proper shipping name, or in § 173.185 or § 173.225(e) Organic Peroxide Table for Type F organic peroxides, use of an IBC or Large Packaging for the material may be authorized when approved by the Associate Administrator. The letter “Z” shown in the marking code for composite IBCs must be replaced with a capital code letter designation found in § 178.702(a)(2) of this subchapter to specify the material used for the other packaging. Tables 1, 2, and 3 follow:

Table 1—IB Codes (IBC Codes)

IBC code	Authorized IBCs
IB1	Authorized IBCs: Metal (31A, 31B and 31N). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50° C (1.1 bar at 122° F), or 130 kPa at 55° C (1.3 bar at 131° F) are authorized.
IB2	Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50° C (1.1 bar at 122° F), or 130 kPa at 55° C (1.3 bar at 131° F) are authorized.
IB3	Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50° C (1.1 bar at 122° F), or 130 kPa at 55° C (1.3 bar at 131° F) are authorized, except for UN2672 (also see special provision IP8 in Table 2 for UN2672).
IB4	Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A,

Table 1—IB Codes (IBC Codes)

IBC code	Authorized IBCs
	31B and 31N).
IB5	Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 21HZ1 and 31HZ1).
IB6	Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2 and 31HZ1). Additional Requirement: Composite IBCs 11HZ2 and 21HZ2 may not be used when the hazardous materials being transported may become liquid during transport.
IB7	Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2 and 31HZ1); Wooden (11C, 11D and 11F). Additional Requirement: Liners of wooden IBCs must be sift-proof.
IB8	Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2 and 31HZ1); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).
IB9	IBCs are only authorized if approved by the Associate Administrator.

Table 2—IP Codes

IP code	
IP1	IBCs must be packed in closed freight containers or a closed transport vehicle.
IP2	When IBCs other than metal or rigid plastics IBCs are used, they must be offered for transportation in a closed freight container or a closed transport vehicle.

Table 2—IP Codes

IP code	
IP3	Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner.
IP4	Flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner.
IP5	IBCs must have a device to allow venting. The inlet to the venting device must be located in the vapor space of the IBC under maximum filling conditions.
IP6	Non-specification bulk bins are authorized.
IP7	For UN identification numbers 1327, 1363, 1364, 1365, 1386, 1408, 1841, 2211, 2217, 2793 and 3314, IBCs are not required to meet the IBC performance tests specified in part 178, subpart N, of this subchapter.
IP8	Ammonia solutions may be transported in rigid or composite plastic IBCs (31H1, 31H2 and 31HZ1) that have successfully passed, without leakage or permanent deformation, the hydrostatic test specified in § 178.814 of this subchapter at a test pressure that is not less than 1.5 times the vapor pressure of the contents at 55° C (131° F).
IP13	Transportation by vessel in IBCs is prohibited.
IP14	Air must be eliminated from the vapor space by nitrogen or other means.
IP15	For UN2031 with more than 55% nitric acid, rigid plastic IBCs and composite IBCs with a rigid plastic inner receptacle are authorized for two years from the date of IBC manufacture.
IP16	IBCs of type 31A and 31N are only authorized if approved by the Associate Administrator.
IP19	For UN identification numbers 3531, 3532, 3533, and 3534, IBCs must be designed and constructed to permit the release of gas or vapor to prevent a build-up of

Table 2—IP Codes

IP code	
	pressure that could rupture the IBCs in the event of loss of stabilization.
IP20	Dry sodium cyanide or potassium cyanide is also permitted in siftproof, water-resistant, fiberboard IBCs when transported in closed freight containers or transport vehicles.
IP21	When transported by vessel, flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner.

Table 3—IB CODES

[Large packaging authorizations]

IB3	Authorized Large Packagings (LIQUIDS) (PG III materials only) [2]
Inner packagings:	Large outer packagings:
Glass 10 liter	steel (50A).
Plastics 30 liter	aluminum (50B).
Metal 40 liter	metal other than steel or aluminum (50N).
	rigid plastics (50H)
	natural wood (50C).
	plywood (50D)
	reconstituted wood (50F)
	rigid fiberboard (50G).

IB8	Authorized Large Packagings (SOLIDS) (PG III materials only) [2]

[2] Except when authorized under Special Provision 41.

[2] Except when authorized under Special Provision 41.

Table 3—IB CODES

[Large packaging authorizations]

Inner packagings:	Large outer packagings:
Glass 10 kg	steel (50A).
Plastics 50 kg	aluminum (50B).
Metal 50 kg	metal other than steel or aluminum (50N).
Paper 50 kg	flexible plastics (51H). [1]
Fiber 50 kg	rigid plastics (50H)
	natural wood (50C).
	plywood (50D)
	reconstituted wood (50F)
	rigid fiberboard (50G).

(5) “N” codes. These provisions apply only to non-bulk packagings:

Code/Special Provisions

N3 Glass inner packagings are permitted in combination or composite packagings only if the hazardous material is free from hydrofluoric acid.

N4 For combination or composite packagings, glass inner packagings, other than ampoules, are not permitted.

N5 Glass materials of construction are not authorized for any part of a packaging which is normally in contact with the hazardous material.

N6 Battery fluid packaged with electric storage batteries, wet or dry, must conform to the packaging provisions of § 173.159 (g) or (h) of this subchapter.

N7 The hazard class or division number of the material must be marked on the package in accordance with § 172.302 of this subchapter. However, the hazard label corresponding to the hazard class or division may be substituted for the marking.

N8 Nitroglycerin solution in alcohol may be transported under this entry only when the solution is packed in metal cans of not more than 1 L capacity each, overpacked in a wooden box containing not more than 5 L. Metal cans must be completely surrounded with absorbent cushioning material. Wooden boxes must be completely lined with a suitable material impervious to water and nitroglycerin.

N11 This material is excepted for the specification packaging requirements of this subchapter if the material is packaged in strong, tight non-bulk packaging meeting the requirements of subparts A and B of part 173 of this subchapter.

N12 Plastic packagings are not authorized.

N20 A 5M1 multi-wall paper bag is authorized if transported in a closed transport vehicle.

N25 Steel single packagings are not authorized.

N32 Aluminum materials of construction are not authorized for single packagings.

N33 Aluminum drums are not authorized.

[1] Flexible plastic (51H) Large Packagings are only authorized for use with flexible inner packagings.

N34 Aluminum construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.

N36 Aluminum or aluminum alloy construction materials are permitted only for halogenated hydrocarbons that will not react with aluminum.

N37 This material may be shipped in an integrally-lined fiber drum (1G) which meets the general packaging requirements of subpart B of part 173 of this subchapter, the requirements of part 178 of this subchapter at the packing group assigned for the material and to any other special provisions of column 7 of the § 1.A172.101 table.

N40 This material is not authorized in the following packagings:

a. A combination packaging consisting of a 4G fiberboard box with inner receptacies of glass or earthenware;

b. A single packaging of a 4C2 sift-proof, natural wood box; or

c. A composite packaging 6PG2 (glass, porcelain or stoneware receptacles within a fiberboard box).

N41 Metal construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.

N42 1A1 drums made of carbon steel with thickness of body and heads of not less than 1.3 mm (0.050 inch) and with a corrosion-resistant phenolic lining are authorized for stabilized benzyl chloride if tested and certified to the Packing Group I performance level at a specific gravity of not less than 1.8.

N43 Metal drums are permitted as single packagings only if constructed of nickel or monel.

N45 Copper cartridges are authorized as inner packagings if the hazardous material is not in dispersion.

N65 Outage must be sufficient to prevent cylinders or spheres from becoming liquid full at 55 [degrees]C (130 [degrees]F). The vacant space (outage) may be charged with a nonflammable nonliquefied compressed gas if the pressure in the cylinder or sphere at 55 [degrees]C (130 [degrees]F) does not exceed 125 percent of the marked service pressure.

N73 Packagings consisting of outer wooden or fiberboard boxes with inner glass, metal or other strong containers; metal or fiber drums; kegs or barrels; or strong metal cans are authorized and need not conform to the requirements of part 178 of this subchapter.

N74 Packages consisting of tightly closed inner containers of glass, earthenware, metal or polyethylene, capacity not over 0.5 kg (1.1 pounds) securely cushioned and packed in outer wooden barrels or wooden or fiberboard boxes, not over 15 kg (33 pounds) net weight, are authorized and need not conform to the requirements of part 178 of this subchapter.

N75 Packages consisting of tightly closed inner packagings of glass, earthenware or metal, securely cushioned and packed in outer wooden barrels or wooden or fiberboard boxes, capacity not over 2.5 kg (5.5 pounds) net weight, are authorized and need not conform to the requirements of part 178 of this subchapter.

N76 For materials of not more than 25 percent active ingredient by weight, packages consisting of inner metal packagings not greater than 250 mL (8 ounces) capacity each, packed in strong outer packagings together with sufficient absorbent material to completely absorb the liquid contents are authorized and need not conform to the requirements of part 178 of this subchapter.

N77 For materials of not more than two percent active ingredients by weight, packagings need not conform to the requirements of part 178 of this subchapter, if liquid contents are absorbed in an inert material.

N78 Packages consisting of inner glass, earthenware, or polyethylene or other nonfragile plastic bottles or jars not over 0.5 kg (1.1 pounds) capacity each, or metal cans not over five pounds capacity each, packed in outer wooden boxes, barrels or kegs, or fiberboard boxes are authorized and need not conform to the requirements of part 178 of this subchapter. Net weight of contents in fiberboard boxes may not exceed 29 kg (64 pounds). Net weight of contents in wooden boxes, barrels or kegs may not exceed 45 kg (99 pounds).

N79 Packages consisting of tightly closed metal inner packagings not over 0.5 kg (1.1 pounds) capacity each, packed in outer wooden or fiberboard boxes, or wooden barrels, are authorized and need not conform to the requirements of part 178 of this subchapter. Net weight of contents may not exceed 15 kg (33 pounds).

N80 Packages consisting of one inner metal can, not over 2.5 kg (5.5 pounds) capacity, packed in an outer wooden or fiberboard box, or a wooden barrel, are authorized and need not conform to the requirements of part 178 of this subchapter.

N82 See § 173.115 of this subchapter for classification criteria for flammable aerosols.

N83 This material may not be transported in quantities of more than 11.5 kg (25.4 lbs) per package.

N84 The maximum quantity per package is 500 g (1.1 lbs.).

N85 Packagings certified at the Packing Group I performance level may not be used.

N86 UN pressure receptacles made of aluminum alloy are not authorized.

N87 The use of copper valves on UN pressure receptacles is prohibited.

N88 Any metal part of a UN pressure receptacle in contact with the contents may not contain more than 65% copper, with a tolerance of 1%.

N89 When steel UN pressure receptacles are used, only those bearing the “H” mark are authorized.

N90 Metal packagings are not authorized. Packagings of other material with a small amount of metal, for example metal closures or other metal fittings such as those mentioned in part 178 of this subchapter, are not considered metal packagings. Packagings of other material constructed with a small amount of metal must be designed such that the hazardous material does not contact the metal.

N91 The use of a non specification sift-proof, non-bulk, metal can with or without lid, or a non specification sift-proof, non-bulk fiber drum, with or without lid is authorized when transporting coal tar pitch compounds by motor vehicle or rail freight. The fiber drum must to be fabricated with a three ply wall, as a minimum. The coal tar pitch compound must be in a solid mass during transportation.

N92 Notwithstanding the provisions of § 173.24(g) of this subchapter, packagings shall be designed and constructed to permit the release of gas or vapor to prevent a build-up of pressure that could rupture the packagings in the event of loss of stabilization.

N95 UN1075, Liquefied petroleum gas and UN1978, Propane authorized for transport in DOT 4BA240 cylinders is not subject to the UN identification number and proper shipping name marking or the label requirements of this part subject to the following conditions:

a. The cylinder must be transported in a closed motor vehicle displaying FLAMMABLE GAS placards in accordance with subpart F of part 172 of this subchapter.

b. Shipping papers at all times must reflect a correct current accounting of all cylinders both full and expended.

c. The cylinders are collected and transported by a private or a contract carrier for reconditioning, reuse or disposal.

(6) “R” codes. These provisions apply only to transportation by rail.

R1 A person who offers for transportation tank cars containing sulfur, molten or residue of sulfur, molten may reference the Sulfur Institute's, "Molten Sulphur Rail Tank Car Guidance document" (see § 171.7 of this subchapter) to identify tank cars that may pose a risk in transportation due to the accumulation of formed, solid sulfur on the outside of the tank.

(7) "T" codes.

(i) These provisions apply to the transportation of hazardous materials in UN portable tanks. Portable tank instructions specify the requirements applicable to a portable tank when used for the transportation of a specific hazardous material. These requirements must be met in addition to the design and construction specifications in part 178 of this subchapter. Portable tank instructions T1 through T22 specify the applicable minimum test pressure, the minimum shell thickness (in reference steel), bottom opening requirements and pressure relief requirements. Liquefied compressed gases are assigned to portable tank instruction T50. Refrigerated liquefied gases that are authorized to be transported in portable tanks are specified in tank instruction T75.

(ii) The following table specifies the portable tank requirements applicable to "T" Codes T1 through T22. Column 1 specifies the "T" Code. Column 2 specifies the minimum test pressure, in bar (1 bar = 14.5 psig), at which the periodic hydrostatic testing required by § 180.605 of this subchapter must be conducted. Column 3 specifies the section reference for minimum shell thickness or, alternatively, the minimum shell thickness value. Column 4 specifies the applicability of § 178.275(g)(3) of this subchapter for the pressure relief devices. When the word "Normal" is indicated, § 178.275(g)(3) of this subchapter does not apply. Column 5 references applicable requirements for bottom openings in part 178 of this subchapter. "Prohibited" means bottom openings are prohibited, and "Prohibited for liquids" means bottom openings are authorized for solid material only. The table follows:

Table of Portable Tank T Codes T1-T22

[Portable tank codes T1-T22 apply to liquid and

solid hazardous materials of Classes 3 through 9 which are transported in portable tanks.]

Portable tank instruction	**Minimum test pressure (bar)**	**Minimum shell thickness (in mm-reference steel)**	**Pressure-relief requirements (See § 178.275(g))**	**Bottom opening requirements (See § 178.275(d))**
(1)	**(2)**	**(See § 178.274(d))**	**(4)**	**(5)**
		(3)		
T1	1.5	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(2)
T2	1.5	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(3)
T3	2.65	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(2)
T4	2.65	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(3)

T5	2.65	§ 178.274 (d)(2)	§ 178.275 (g)(3)	Prohibited
T6	4	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(2)
T7	4	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(3)
T8	4	§ 178.274 (d)(2)	Normal	Prohibited
T9	4	6 mm	Normal	Prohibited for liquids.
T10	4	6 mm	§ 178.275 (g)(3)	Prohibited
T11	6	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(3)
T12	6	§ 178.274 (d)(2)	§ 178.275 (g)(3)	§ 178.275 (d)(3)
T13	6	6 mm	Normal	Prohibited
T14	6	6 mm	§ 178.275 (g)(3)	Prohibited
T15	10	§ 178.274 (d)(2)	Normal	§ 178.275 (d)(3)
T16	10	§ 178.274 (d)(2)	§ 178.275 (g)(3)	§ 178.275 (d)(3)
T17	10	6 mm	Normal	§ 178.275 (d)(3)
T18	10	6 mm	§ 178.275 (g)(3)	§ 178.275 (d)(3)
T19	10	6 mm	§ 178.275 (g)(3)	Prohibited
T20	10	8 mm	§ 178.275 (g)(3)	Prohibited
T21	10	10 mm	Normal	Prohibited for liquids. § 178.275(d)(2)
T22	10	10 mm	§ 178.275	Prohibited

(iii) T50 When portable tank instruction T50 is indicated in Column (7) of the § 172.101 Hazardous Materials Table, the applicable liquefied compressed gas and chemical under pressure descriptions are authorized to be transported in portable tanks in accordance with the requirements of § 173.313 of this subchapter.

(iv)

T75. When portable tank instruction T75 is referenced in Column (7) of the § 172.101 Table, the applicable refrigerated liquefied gases are authorized to be transported in portable tanks in accordance with the requirements of § 178.277 of this subchapter.

(v) UN and IM portable tank codes/special provisions. When a specific portable tank instruction is specified by a "T" Code in Column (7) of the § 172.101 Table for a specific hazardous material, a specification portable tank conforming to an alternative tank instruction may be used if:

(A) The alternative portable tank has a higher or equivalent test pressure (for example, 4 bar when 2.65 bar is specified);

(B) The alternative portable tank has greater or equivalent wall thickness (for example, 10 mm when 6 mm is specified);

(C) The alternative portable tank has a pressure relief device as specified in the "T" Code. If a frangible disc is required in series with the reclosing pressure relief device for the specified portable tank, the alternative portable tank must be fitted with a frangible disc in series with the reclosing pressure relief device; and

(D) With regard to bottom openings —

(1) When two effective means are specified, the alternative portable tank is fitted with bottom openings having two or three effective means of closure or no bottom openings; or

(2) When three effective means are specified, the portable tank has no bottom openings or three effective means of closure; or

(3) When no bottom openings are authorized, the alternative portable tank must not have bottom openings.

(vi) Except when an organic peroxide is authorized under § 173.225(g), if a hazardous material is not assigned a portable tank "T" Code, the hazardous material may not be transported in a portable tank unless approved by the Associate Administrator.

(8) "TP" codes.

(i) These provisions apply to the transportation of hazardous materials in IM and UN Specification portable tanks. Portable tank special provisions are assigned to certain hazardous materials to specify requirements that are in addition to those provided by the portable tank instructions or the requirements in part 178 of this subchapter. Portable tank special provisions are designated with the abbreviation TP (tank provision) and are assigned to specific hazardous materials in Column (7) of the § 172.101 Table.

(ii) The following is a list of the portable tank special provisions:

Code/Special Provisions

TP1 The maximum degree of filling must not exceed the degree of filling determined by the following:

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Where:

t[r] is the maximum mean bulk temperature during transport, and t[f] is the temperature in degrees celsius of the liquid during filling.

TP2

a. The maximum degree of filling must not exceed the degree of filling determined by the following:

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Where:

t[r] is the maximum mean bulk temperature during transport,

t[f] is the temperature in degrees celsius of the liquid during filling, and

[alpha] is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (t[f]) and the maximum mean bulk temperature during transportation (t[r]) both in degrees celsius.

b. For liquids transported under ambient conditions [alpha] may be calculated using the formula:

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Where:

d[15] and d[50] are the densities (in units of mass per unit volume) of the liquid at 15 [degrees] C (59 [degrees] F) and 50 [degrees] C (122 [degrees] F), respectively.

TP3 The maximum degree of filling (in %) for solids transported above their melting points and for elevated temperature liquids shall be determined by the following:

Click here to view this image.

Where: d[f] and d[r] are the mean densities of the liquid at the mean temperature of the liquid during filling and the maximum mean bulk temperature during transport respectively.

TP4 The maximum degree of filling for portable tanks must not exceed 90%.

TP5 For a portable tank used for the transport of flammable refrigerated liquefied gases or refrigerated liquefied oxygen, the maximum rate at which the portable tank may be filled must not exceed the liquid flow capacity of the primary pressure relief system rated at a pressure not exceeding 120 percent of the portable tank’s design pressure. For portable tanks used for the transport of refrigerated liquefied helium and refrigerated liquefied atmospheric gas (except oxygen), the maximum rate at which the tank is filled must not exceed the liquid flow capacity of the pressure relief device rated at 130 percent of the portable tank’s design pressure. Except for a portable tank containing refrigerated liquefied helium, a portable tank shall have an outage of at least two percent below the inlet of the pressure relief device or pressure control valve, under conditions of incipient opening, with the portable tank in a level attitude. No outage is required for helium.

TP6 The tank must be equipped with a pressure release device which prevent a tank from bursting under fire engulfment conditions (the conditions prescribed in CGA pamphlet S-1.2 (see § 171.7 of this subchapter) or alternative conditions approved by the Associate Administrator may be used to consider the fire engulfment condition), taking into account the properties of the hazardous material to be transported.

TP7 The vapor space must be purged of air by nitrogen or other means.

TP8 A portable tank having a minimum test pressure of 1.5 bar (150 kPa) may be used when the flash point of the hazardous material transported is greater than 0 [degrees] C (32 [degrees] F).

TP9 A hazardous material assigned to special provision TP9 in Column (7) of the § 172.101 Table may only be transported in a portable tank if approved by the Associate Administrator.

TP10 A lead lining, not less than 5 mm thick, which shall be tested annually, or another suitable lining material approved by the competent authority, is required. A portable tank may be offered for transport after the date of expiry of the last lining inspection for a period not to exceed three months for purposes of performing the next required test or inspection, after emptying but before cleaning.

TP13 Self-contained breathing apparatus must be provided when this hazardous material is transported by sea.

TP16 The portable tank must be protected against over and under pressurization which may be experienced during transportation. The means of protection must be approved by the approval agency designated to approve the portable tank in accordance with the procedures in part 107, subpart E, of this subchapter. The pressure relief device must be preceded by a frangible disk in accordance with the requirements in § 178.275(g)(3) of this subchapter to prevent crystallization of the product in the pressure relief device.

TP17 Only inorganic non-combustible materials may be used for thermal insulation of the tank.

TP18 The temperature of this material must be maintained between 18 [degrees] C (64.4 [degrees] F) and 40 [degrees] C (104 [degrees] F) while in transportation. Portable tanks containing solidified methacrylic acid must not be reheated during transportation.

TP19 The calculated wall thickness must be increased by 3 mm at the time of construction. Wall thickness must be verified ultrasonically at intervals midway between periodic hydraulic tests (every 2.5 years). The portable tank must not be used if the wall thickness is less than that prescribed by the applicable T code in Column (7) of the Table for this material.

TP20 This hazardous material must only be transported in insulated tanks under a nitrogen blanket.

TP21 The wall thickness must not be less than 8 mm. Portable tanks must be hydraulically tested and internally inspected at intervals not exceeding 2.5 years.

TP22 Lubricants for portable tank fittings (for example, gaskets, shut-off valves, flanges) must be oxygen compatible.

TP24 The portable tank may be fitted with a device to prevent the build up of excess pressure due to the slow decomposition of the hazardous material being transported. The device must be in the vapor space when the tank is filled under maximum filling conditions. This device must also prevent an unacceptable amount of leakage of liquid in the case of overturning.

TP25 Sulphur trioxide 99.95% pure and above may be transported in tanks without an inhibitor provided that it is maintained at a temperature equal to or above 32.5 [degrees] C (90.5 [degrees] F).

TP26 The heating device must be exterior to the shell. For UN 3176, this requirement only applies when the hazardous material reacts dangerously with water.

TP27 A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in § 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

TP28 A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in § 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

TP29 A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in § 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

TP30 This hazardous material may only be transported in insulated tanks.

TP31 This hazardous material may only be transported in tanks in the solid state.

TP32 Portable tanks may be used subject to the following conditions:

a. Each portable tank constructed of metal must be fitted with a pressure-relief device consisting of a reclosing spring loaded type, a frangible disc or a fusible element. The set to discharge for the spring loaded pressure relief device and the burst pressure for the frangible disc, as applicable, must not be greater than 2.65 bar for portable tanks with minimum test pressures greater than 4 bar;

b. The suitability for transport in tanks must be demonstrated using test 8(d) in Test Series 8 (see UN Manual of Tests and Criteria, Part 1, Sub-section 18.7) (IBR, see § 171.7 of this subchapter) or an alternative means approved by the Associate Administrator.

TP33 The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.

TP36 For material assigned this portable tank special provision, portable tanks used to transport such material may be equipped with fusible elements in the vapor space of the portable tank.

TP37 IM portable tanks are only authorized for the shipment of hydrogen peroxide solutions in water containing 72% or less hydrogen peroxide by weight. Pressure relief devices shall be designed to prevent the entry of foreign matter, the leakage of liquid and the development of any dangerous excess pressure. In addition, the portable tank must be designed so that internal surfaces may be effectively cleaned and passivated. Each tank must be equipped with pressure relief devices conforming to the following requirements:

Concentration of hydrogen per peroxide solution	**Total** [1]
52% or less	11
Over 52%, but not greater than 60%	22
Over 60%, but not greater than 72%	32

TP38 Each portable tank must be insulated with an insulating material so that the overall thermal conductance at 15.5 [degrees] C (60 [degrees] F) is no more than 1.5333 kilojoules per hour per square meter per degree Celsius (0.075 Btu per hour per square foot per degree Fahrenheit) temperature differential. Insulating materials may not promote corrosion to steel when wet.

TP39 [Removed and Reserved]

TP40 The portable tank must not be transported when connected with spray application equipment.

TP41 [Removed and Reserved]

[1] Total venting capacity in standard cubic feet hour (S.C.F.H.) per pound of hydrogen peroxide solution.

TP44 Each portable tank must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of § 173.24b(b) of this subchapter. Thickness of stainless steel for tank shell and heads must be the greater of 7.62 mm (0.300 inch) or the thickness required for a portable tank with a design pressure at least equal to 1.5 times the vapor pressure of the hazardous material at 46 [degrees] C (115 [degrees] F).

TP45 Each portable tank must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of 173.24b(b) of this subchapter. Thickness of stainless steel for portable tank shells and heads must be the greater of 6.35 mm (0.250 inch) or the thickness required for a portable tank with a design pressure at least equal to 1.3 times the vapor pressure of the hazardous material at 46 [degrees] C (115 [degrees] F).

TP46 Portable tanks in sodium metal service are not required to be hydrostatically retested.

TP47 The 2.5 year internal examination may be waived or substituted by other test methods or inspection procedures specified by the competent authority or its authorized body, provided that the portable tank is dedicated to the transport of the organometallic substances to which this tank special provision is assigned. However this examination is required when the conditions of § 180.605(f) are met.

(9) “W” codes. These provisions apply only to transportation by water:

Code/Special Provisions

W1 This substance in a non friable prill or granule form is not subject to the requirements of this subchapter when tested in accordance with the UN Manual of Test and Criteria (IBR, See § 171.7 of this subchapter) and is found to not meet the definition or criteria for inclusion in Division 5.1.

W7 Vessel stowage category for uranyl nitrate hexahydrate solution is “D” as defined in § 172.101(k)(4).

W8 Vessel stowage category for pyrophoric thorium metal or pyrophoric uranium metal is “D” as defined in § 172.101(k)(4).

W9 When offered for transportation by water, the following Specification packagings are not authorized unless approved by the Associate Administrator: woven plastic bags, plastic film bags, textile bags, paper bags, IBCs and bulk packagings.

W10 When offered for transportation by vessel, the use of Large Packagings (see § 171.8 of this subchapter) is prohibited.

W31 Non-bulk packagings must be hermetically sealed.

W40 Non-bulk bags are not allowed.

W41 When offered for transportation by water, this material must be packaged in bales and be securely and tightly bound with rope, wire or similar means.

W100 Non-bulk flexible, fibreboard or wooden packagings must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 172

History

[55 FR 52582, Dec. 21, 1990, as amended at 56 FR 66250, Dec. 20, 1991; 57 FR 45458, Oct. 1, 1992; 57 FR 47513, Oct. 16, 1992; 57 FR 52938, Nov. 5, 1992; 57 FR 59310, Dec. 15, 1992; 58 FR 50235, Sept. 24, 1993; 58 FR 51531, Oct. 1, 1993; 59 FR 28493, June 2, 1994; 59 FR 38064, July 26, 1994; 59 FR 48549, Sept. 21, 1994; 59 FR 49133, Sept. 26, 1994; 59 FR 67485, Dec. 29, 1994; 60 FR 26805, May 18, 1995; 60 FR 48780, 48787, Sept. 20, 1995; 60 FR 49048, 49072, Sept. 21, 1995; 60 FR 49106, 49110, Sept. 21, 1995; 61 FR 27166, 27172, May 30, 1996, as confirmed at 61 FR 51236, Oct. 1, 1996; 61 FR 28666, 28675, June 5, 1996, as confirmed at 61 FR 38605, 38642, July 25, 1996; 61 FR 50252, 50254, Sept. 25, 1996; 61 FR 50616, 50624, Sept. 26, 1996; 61 FR 51238, 51240, Oct. 1, 1996; 61 FR 51334, 51338, Oct. 1, 1996; 62 FR 24690, 24718, 24719, May 6, 1997; 62 FR 30767, 30772, June 5, 1997, as corrected and amended at 62 FR 34667, 34669, June 27, 1997; 63 FR 37454, 37461, July 10, 1998; 63 FR 52844, 52849, Oct. 1, 1998; 64 FR 10742, 10775, Mar. 5, 1999; 64 FR 45388, 45397, Aug. 19, 1999; 64 FR 51912, 51918, Sept. 27, 1999; 65 FR 50450, 50459, Aug. 18, 2000; 65 FR 58614, 58626, Sept. 29, 2000; 66 FR 8644, 8647, Feb. 1, 2001; 66 FR 33316, 33414, June 21, 2001; 66 FR 45177, 45182, Aug. 28, 2001; 66 FR 45376, 45379, Aug. 28, 2001; 67 FR 15736, 15743, Apr. 3, 2002; 67 FR 53118, 53135, Aug. 14, 2002, as corrected at 67 FR 54967, Aug. 27, 2002; 67 FR 61006, 61013, Sept. 27, 2002; 68 FR 19258, 19277, Apr. 18, 2003; 68 FR 44992, 45026, July 31, 2003; 68 FR 57629, 57632, Oct. 6, 2003; 68 FR 75734, 75741, Dec. 31, 2003; 69 FR 34604, 34611, June 22, 2004; 69 FR 54042, 54045, Sept. 7, 2004; 69 FR 75208, 75215, Dec. 15, 2004, as confirmed and amended at 72 FR 44930, 44947, 44948, Aug. 9, 2007; 69 FR 76044, 76150, Dec. 20, 2004; 70 FR 34066, 34075, June 13, 2005; 70 FR 34381, 34397, June 14, 2005; 70 FR 56084, 56098, Sept. 23, 2005; 70 FR 73156, 73164, Dec. 9, 2005; 71 FR 3418, 3427, Jan. 23, 2006; 71 FR 14586, 14601, Mar. 22, 2006; 71 FR 32244, 32258, June 2, 2006; 71 FR 33858, 33880, June 12, 2006; 71 FR 56894, 56895, Sept. 28, 2006; 71 FR 78596, 78626, Dec. 29, 2006; 72 FR 4442, 4455, Jan. 31, 2007; 72 FR 55091, Sept. 28, 2007; 73 FR 4699, 4716, Jan. 28, 2008; 74 FR 1770, 1799, Jan. 13, 2009; 74 FR 2200, 2249, Jan. 14, 2009; 75 FR 5376, 5391, Feb. 2, 2010; 76 FR 3308, Jan. 19, 2011; 76 FR 43510, 43526, July 20, 2011; 77 FR 60935, 60942, Oct. 5, 2012; 78 FR 988, 1070, Jan. 7, 2013.; 78 FR 1101, 1112, Jan. 7, 2013; 78 FR 14702, 14714, Mar. 7, 2013; 78 FR 15303, 15326, Mar. 11, 2013; 78 FR 42457, 42477, July 16, 2013; 78 FR 45880, 45892, July 30, 2013; 78 FR 60745, 60753, Oct. 2, 2013; 78 FR 65454, 65478, Oct. 31, 2013; 79 FR 15033, 15045, Mar. 18, 2014; 79 FR 46012, 46036, Aug. 6, 2014; 80 FR 1076, 1146, Jan. 8, 2015; 80 FR 9217, Feb. 20, 2015; 80 FR 72914, 72923, Nov. 23, 2015; 80 FR 79424, 79453, Dec. 21, 2015; 81 FR 3636, 3670, Jan. 21, 2016; 81 FR 35484, 35540, June 2, 2016; 82 FR 15796, 15870, Mar. 30, 2017; 83 FR 52878, 52899, Oct. 18, 2018; 84 FR 8006, 8027, Mar. 6, 2019; 85 FR 27810, 27876, May 11, 2020; 85 FR 44994, 45029, July 24, 2020; 85 FR 75680, 75712, Nov. 25, 2020; 85 FR 83366, 83380, Dec. 21, 2020, as corrected at 86 FR 2564, Jan. 13, 2021; 87 FR 44944, 44988, July 26, 2022; 87 FR 79752, 79772, Dec. 27, 2022; 88 FR 60356, 60375, Sept. 1, 2023]

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49 CFR 172.700

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 172.700 Purpose and scope.

(a) Purpose. This subpart prescribes requirements for training hazmat employees.

(b) Scope. Training as used in this subpart means a systematic program that ensures a hazmat employee has familiarity with the general provisions of this subchapter, is able to recognize and identify hazardous materials, has knowledge of specific requirements of this subchapter applicable to functions performed by the employee, and has knowledge of emergency response information, self-protection measures and accident prevention methods and procedures (see § 172.704).

(c) Modal-specific training requirements. Additional training requirements for the individual modes of transportation are prescribed in parts 174, 175, 176, and 177 of this subchapter.

Statutory Authority

49 App. U.S.C. 1803, 1804, 1805, 1808; 49 CFR part 1.

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 172

History

Amdt. 172-126, 57 FR 20952, May 15, 1992.

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49 CFR 172.701

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 172.701 Federal-State relationship.

This subpart and the parts referenced in § 172.700(c) prescribe minimum training requirements for the transportation of hazardous materials. For motor vehicle drivers, however, a State may impose more stringent training requirements only if those requirements—

(a) Do not conflict with the training requirements in this subpart and in part 177 of this subchapter; and

(b) Apply only to drivers domiciled in that State.

Statutory Authority

49 App. U.S.C. 1803, 1804, 1805, 1808; 49 CFR part 1.

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 172

History

Amdt. 172-126, 57 FR 20952, May 15, 1992.

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49 CFR 172.702

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 172.702 Applicability and responsibility for training and testing.

(a) A hazmat employer shall ensure that each of its hazmat employees is trained in accordance with the requirements prescribed in this subpart.

(b) Except as provided in § 172.704(c)(1), a hazmat employee who performs any function subject to the requirements of this subchapter may not perform that function unless instructed in the requirements of this subchapter that apply to that function. It is the duty of each hazmat employer to comply with the applicable requirements of this subchapter and to thoroughly instruct each hazmat employee in relation thereto.

(c) Training may be provided by the hazmat employer or other public or private sources.

(d) A hazmat employer shall ensure that each of its hazmat employees is tested by appropriate means on the training subjects covered in § 172.704.

Statutory Authority

49 App. U.S.C. 1803, 1804, 1805, 1808; 49 CFR part 1.

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 172

History

[Amdt. 172-126, 57 FR 20952, May 15, 1992; 57 FR 22182, May 27, 1992; Amdt. 172-149, 61 FR 27166, 27173, May 30, 1996, as confirmed at Amdt. 172-149, 61 FR 51236, Oct. 1, 1996]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 172.704 Training requirements.

(a) Hazmat employee training must include the following:

(1) General awareness/familiarization training. Each hazmat employee shall be provided general awareness/familiarization training designed to provide familiarity with the requirements of this subchapter, and to enable the employee to recognize and identify hazardous materials consistent with the hazard communication standards of this subchapter.

(2) Function-specific training.

(i) Each hazmat employee must be provided function-specific training concerning requirements of this subchapter, or exemptions or special permits issued under subchapter A of this chapter, that are specifically applicable to the functions the employee performs.

(ii) As an alternative to function-specific training on the requirements of this subchapter, training relating to the requirements of the ICAO Technical Instructions and the IMDG Code may be provided to the extent such training addresses functions authorized by subpart C of part 171 of this subchapter.

(3) Safety training. Each hazmat employee shall receive safety training concerning —

(i) Emergency response information required by subpart G of part 172;

(ii) Measures to protect the employee from the hazards associated with hazardous materials to which they may be exposed in the work place, including specific measures the hazmat employer has implemented to protect employees from exposure; and

(iii) Methods and procedures for avoiding accidents, such as the proper procedures for handling packages containing hazardous materials.

(4) Security awareness training. Each hazmat employee must receive training that provides an awareness of security risks associated with hazardous materials transportation and methods designed to enhance transportation security. This training must also include a component covering how to recognize and respond to possible security threats. New hazmat employees must receive the security awareness training required by this paragraph within 90 days after employment.

(5) In-depth security training. Each hazmat employee of a person required to have a security plan in accordance with subpart I of this part who handles hazardous materials covered by the plan, performs a regulated function related to the hazardous materials covered by the plan, or is responsible for implementing the plan must be trained concerning the security plan and its implementation. Security training must include company security objectives, organizational security structure, specific security

procedures, specific security duties and responsibilities for each employee, and specific actions to be taken by each employee in the event of a security breach.

(b) OSHA, EPA, and other training. Training conducted by employers to comply with the hazard communication programs required by the Occupational Safety and Health Administration of the Department of Labor (29 CFR 1910.120 or 1910.1200) or the Environmental Protection Agency (40 CFR 311.1), or training conducted by employers to comply with security training programs required by other Federal or international agencies, may be used to satisfy the training requirements in paragraph (a) of this section to the extent that such training addresses the training components specified in paragraph (a) of this section.

(c) Initial and recurrent training —

(1) Initial training. A new hazmat employee, or a hazmat employee who changes job functions may perform those functions prior to the completion of training provided —

(i) The employee performs those functions under the direct supervision of a properly trained and knowledgeable hazmat employee; and

(ii) The training is completed within 90 days after employment or a change in job function.

(2) Recurrent training. A hazmat employee must receive the training required by this subpart at least once every three years. For in-depth security training required under paragraph (a)(5) of this section, a hazmat employee must be trained at least once every three years or, if the security plan for which training is required is revised during the three-year recurrent training cycle, within 90 days of implementation of the revised plan.

(3) Relevant Training. Relevant training received from a previous employer or other source may be used to satisfy the requirements of this subpart provided a current record of training is obtained from hazmat employees' previous employer.

(4) Compliance. Each hazmat employer is responsible for compliance with the requirements of this subchapter regardless of whether the training required by this subpart has been completed.

(d) Recordkeeping. Each hazmat employer must create and retain a record of current training of each hazmat employee, inclusive of the preceding three years, in accordance with this section for as long as that employee is employed by that employer as a hazmat employee and for 90 days thereafter. A hazmat employer must make a hazmat employee's record of current training available upon request, at a reasonable time and location, to an authorized official of the Department of Transportation or of an entity explicitly granted authority to enforce the HMR. The record must include:

(1) The hazmat employee's name;

(2) The most recent training completion date of the hazmat employee's training;

(3) A description, copy, or the location of the training materials used to meet the requirements in paragraph (a) of this section;

(4) The name and address of the person providing the training; and

(5) Certification that the hazmat employee has been trained and tested, as required by this subpart.

(e) Limitations. The following limitations apply:

(1) A hazmat employee who repairs, modifies, reconditions, or tests packagings, as qualified for use in the transportation of hazardous materials, and who does not perform any other function subject to the requirements of this subchapter, is not subject to the training requirement of paragraph (a)(3) of this section.

(2) A railroad maintenance-of-way employee or railroad signalman, who does not perform any function subject to the requirements of this subchapter, is not subject to the training requirements of paragraphs (a)(2), (a)(4), or (a)(5) of this section.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 172

History

[57 FR 20952, May 15, 1992, as amended by 58 FR 5851, Jan. 22, 1993; 60 FR 49106, 49110, Sept. 21, 1995; 61 FR 27166, 27173, May 30, 1996, as confirmed at 61 FR 51236, Oct. 1, 1996; 65 FR 50450, 50460, Aug. 18, 2000; 68 FR 14510, 14521, Mar. 25, 2003; 70 FR 73156, 73164, Dec. 9, 2005; 73 FR 4699, 4716, Jan. 28, 2008; 73 FR 57001, 57005, Oct. 1, 2008; 75 FR 10974, 10988, Mar. 9, 2010; 76 FR 56304, 56314, Sept. 13, 2011; 78 FR 15303, 15326, Mar. 11, 2013; 80 FR 72914, 72923, Nov. 23, 2015]

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Part 173 — Shippers — General Requirements for Shipments and Packagings

Statutory Authority

AUTHORITY NOTE APPLICABLE TO ENTIRE PART:

49 U.S.C. 5101-5128, 44701; 49 CFR 1.81, 1.96 and 1.97.

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49 CFR 173.50

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 173.50 Class 1 — Definitions.

(a) Explosive. For the purposes of this subchapter, an explosive means any substance or article, including a device, which is designed to function by explosion (i.e., an extremely rapid release of gas and heat) or which, by chemical reaction within itself, is able to function in a similar manner even if not designed to function by explosion, unless the substance or article is otherwise classed under the provisions of this subchapter. The term includes a pyrotechnic substance or article, unless the substance or article is otherwise classed under the provisions of this subchapter.

(b) Explosives in Class 1 are divided into six divisions as follows:

(1) Division 1.1 consists of explosives that have a mass explosion hazard. A mass explosion is one which affects almost the entire load instantaneously.

(2) Division 1.2 consists of explosives that have a projection hazard but not a mass explosion hazard.

(3) Division 1.3 consists of explosives that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.

(4) Division 1.4 consists of explosives that present a minor explosion hazard. The explosive effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package.

(5) Division 1.5 [1]consists of very insensitive explosives. This division is comprised of substances which have a mass explosion hazard but are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport.

(6) Division 1.6 [2]consists of extremely insensitive articles that do not have a mass explosion hazard. This division is comprised of articles which predominately contain extremely insensitive substances and that demonstrate a negligible probability of accidental initiation or propagation.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[1] The probability of transition from burning to detonation is greater when large quantities are transported in a vessel.

[2] The risk from articles of Division 1.6 is limited to the explosion of a single article.

[55 FR 52617 Dec. 21, 1990, as amended at 56 FR 66267, Dec. 20, 1991; 66 FR 45177, 45183, Aug. 28, 2001; 68 FR 48562, 48569, Aug. 14, 2003; 78 FR 988, 1074, Jan. 7, 2013.; 82 FR 15796, 15876, Mar. 30, 2017]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 173.51 Authorization to offer and transport explosives.

(a) Unless otherwise provided in this subpart, no person may offer for transportation or transport an explosive, unless it has been tested and classed and approved by the Associate Administrator (§ 173.56).

(b) Reports of explosives approved by the Department of Defense or the Department of Energy must be filed with, and receive acknowledgement in writing by, the Associate Administrator prior to such explosives being offered for transportation.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[Amdt. 173-224, 55 FR 52617, Dec. 21, 1990; 66 FR 45376, 45380, Aug. 28, 2001]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 173.52 Classification codes and compatibility groups of explosives.

(a) The classification code for an explosive, which is assigned by the Associate Administrator in accordance with this subpart, consists of the division number followed by the compatibility group letter. Compatibility group letters are used to specify the controls for the transportation, and storage related thereto, of explosives and to prevent an increase in hazard that might result if certain types of explosives were stored or transported together. Transportation compatibility requirements for carriers are prescribed in § 174.81, 175.78. 176.83 and 177.848 of this subchapter for transportation by rail, air, vessel, and public highway, respectively, and storage incidental thereto.

(b) Compatibility groups and classification codes for the various types of explosives are set forth in the following tables. Table 1 sets forth compatibility groups and classification codes for substances and articles described in the first column of Table 1. Table 2 shows the number of classification codes that are possible within each explosive division. Altogether, there are 35 possible classification codes for explosives.

Table 1 — Classification Codes

Description of substances or article to be classified	Compatibility group	Classification code
Primary explosive substance	A	1.1A
Article containing a primary explosive substance and not containing two or more effective protective features. Some articles, such as detonators for blasting, detonator assemblies for blasting and primers, cap-type, are included, even though they do not contain primary explosives.	B	1.1B 1.2B 1.4B
Propellant explosive substance or other deflagrating		

§ 173.52 Classification codes and compatibility groups of explosives.

Table 1 — Classification Codes

Description of substances or article to be classified	Compatibility group	Classification code
explosive substance or article containing such explosive substance	C	1.1C 1.2C 1.3C 1.4C
Secondary detonating explosive substance or black powder or or article containing a secondary detonating explosive substance, in each case without means of initiation and without a propelling charge, or article containing a primary explosive substance and containing two or more effective protective features.	D	1.1D 1.2D 1.4D 1.5D
Article containing a secondary detonating explosive substance, without means of initiation, with a propelling charge (other than one containing flammable liquid or gel or hypergolic liquid)	E	1.1E 1.2E 1.4E
Article containing a secondary detonating explosive substance with its means of initiation, with a propelling charge (other than one containing flammable liquid or gel or hypergolic liquid) or without a propelling charge.	F	1.1F 1.2F 1.3F 1.4F
Pyrotechnic substance or article containing a pyrotechnic substance, or article containing both an explosive substance and an illuminating,	G	1.1G 1.2G 1.3G

§ 173.52 Classification codes and compatibility groups of explosives.

Table 1 — Classification Codes

Description of substances or article to be classified	Compatibility group	Classification code
incendiary, tear-producing or smoke-producing substance (other than a water-activated article or one containing white phosphorus, phosphide or flammable liquid or gel or hypergolic liquid)		1.4G
Article containing both an explosive substance and white phosphorus	H	1.2H 1.3H
Article containing both an explosive substance and flammable liquid or gel	J	1.1J 1.2J 1.3J
Article containing both an explosive substance and a toxic chemical agent	K	1.2K 1.3K
Explosive substance or article containing an explosive substance and presenting a special risk (e.g., due to water-activation or presence of hybergolic liquids, phosphides or pyrophoric substances) needing isolation of each type.	L	1.1L 1.2L 1.3L
Articles predominantly containing extremely insensitive substances	N	1.6N
Substance or article so packed or designed that any hazardous effects arising from accidental functioning are limited to the extent that they do not significantly hinder or prohibit fire	S	1.4S

§ 173.52 Classification codes and compatibility groups of explosives.

Table 1 — Classification Codes

Description of substances or article to be classified	Compatibility group	Classification code
fighting or other emergency response efforts in the immediate vicinity of the package		

[PUBLISHER'S NOTE: As printed in the GPO edition of the CFR, the following table is too wide to fit on an 80-character screen. Therefore, the table has been reformatted for the screen.]

Table 2—Scheme of Classification of Explosives, Combination of Hazard Division with Compatibility Group

Hazard division	Compatibility group						
	A	B	C	D	E	F	G
1.1	1.1A	1.1B	1.1C	1.1D	1.1E	1.1F	1.1G
1.2		1.2B	1.2C	1.2D	1.2E	1.2F	1.2G
1.3			1.3C			1.3F	1.3G
1.4		1.4B	1.4C	1.4D	1.4E	1.4F	1.4G
1.5				1.5D			
1.6							
Total	1	3	4	4	3	4	4

Table 2—Scheme of Classification of Explosives, Combination of Hazard Division with Compatibility Group

Hazard division	Compatibility group						
	H	J	K	L	N	S	A-S
1.1		1.1J		1.1L			9
1.2	1.2H	1.2J	1.2K	1.2L			10
1.3	1.3H	1.3J	1.3K	1.3L			7

Table 2—Scheme of Classification of Explosives, Combination of Hazard Division with Compatibility Group

Hazard division	Compatibility group						
	H	J	K	L	N	S	A-S
1.4						1.4S	7
1.5							1
1.6					1.6N		1
Total	2	3	2	3	1	1	35

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[55 FR 52617, Dec. 21, 1990; 59 FR 67492, Dec. 29, 1994; 64 FR 51912, 51918, Sept. 27, 1999; 66 FR 45376, 45380, Aug. 28, 2001; 76 FR 56304, 56315, Sept. 13, 2011; 78 FR 988, 1074, Jan. 7, 2013.; 82 FR 15796, 15876, Mar. 30, 2017]

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§ 173.53 Provisions for using old classifications of explosives.

Where the classification system in effect prior to January 1, 1991, is referenced in State or local laws, ordinances or regulations not pertaining to the transportation of hazardous materials, the following table may be used to compare old and new hazard class names:

Current classification	**Class name prior to Jan. 1, 1991**
Division 1.1	Class A explosives.
Division 1.2	Class A or Class B explosives.
Division 1 3	Class B explosive.
Division 1.4	Class C explosives.
Division 1.5	Blasting agents.
Division 1.6	No applicable hazard class.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

Amdt. 173-224, 55 FR 52617, Dec. 21, 1990.

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§ 173.54 Forbidden explosives.

Unless otherwise provided in this subchapter, the following explosives shall not be offered for transportation or transported:

(a) An explosive that has not been approved in accordance with § 173.56 of this subpart.

(b) An explosive mixture or device containing a chlorate and also containing:

(1) An ammonium salt, including a substituted ammonium or quaternary ammonium salt; or

(2) An acidic substance, including a salt of a weak base and a strong acid.

(c) A leaking or damaged package or article containing an explosive.

(d) Propellants that are unstable, condemned or deteriorated.

(e) Nitroglycerin. diethylene glycol dinitrate, or any other liquid explosives not specifically authorized by this subchapter.

(f) A loaded firearm (except as provided in 49 CFR 1544.219).

(g) Fireworks that combine an explosive and a detonator.

(h) Fireworks containing yellow or white phosphorus.

(i) A toy torpedo, the maximum outside dimension of which exceeds 23 mm (0.906 inch), or a toy torpedo containing a mixture of potassium chlorate, black antimony (antimony sulfide), and sulfur, if the weight of the explosive material in the device exceeds 0.26 g (0.01 ounce).

(j) Explosives specifically forbidden in the § 172.101 Table of this subchapter.

(k) Explosives not meeting the acceptance criteria specified in § 173.57 of this subchapter.

(l) An explosive article with its means of initiation or ignition installed, unless approved in accordance with § 173.56.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

§ 173.54 Forbidden explosives.

[55 FR 52617 Dec. 21, 1990, as amended at 56 FR 66267, Dec. 20, 1991; 58 FR 50236, Sept. 24, 1993; 67 FR 61006, 61013, Sept. 27, 2002; 68 FR 48562, 48569, Aug. 14, 2003]

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49 CFR 173.55

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§ 173.55 [Reserved]

[NO TEXT IN ORIGINAL]

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

Amdt. 173-224, 55 FR 52617 Dec. 21, 1990.

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§ 173.56 New explosives — definition and procedures for classification and approval.

(a) Definition of new explosive. For the purposes of this subchapter a new explosive means an explosive produced by a person who:

(1) Has not previously produced that explosive; or

(2) Has previously produced that explosive but has made a change in the formulation, design or process so as to alter any of the properties of the explosive. An explosive will not be considered a "new explosive" if an agency listed in paragraph (b) of this section has determined, and confirmed in writing to the Associate Administrator, that there are no significant differences in hazard characteristics from the explosive previously approved.

(b) Examination, classification and approval. Except as provided in §§ 173.64, 173.65, and 173.67, no person may offer a new explosive for transportation unless that person has specified to the examining agency the ranges of composition of ingredients and compounds, showing the intended manufacturing tolerances in the composition of substances or design of articles which will be allowed in that material or device, and unless it has been examined, classed and approved as follows:

(1) Except for an explosive made by or under the direction or supervision of the Department of Defense (DOD) or the Department of Energy (DOE), a new explosive must be examined and assigned a recommended shipping description, division and compatibility group, based on the tests and criteria prescribed in §§ 173.52, 173.57 and 173.58. The person requesting approval of the new explosive must submit to the Associate Administrator a report of the examination and assignment of a recommended shipping description, division, and compatibility group. If the Associate Administrator finds the approval request meets the regulatory criteria, the new explosive will be approved in writing and assigned an EX number. The examination must be performed by a person who is approved by the Associate Administrator under the provisions of subpart H of part 107 of this chapter and who —

(i) Has (directly, or through an employee involved in the examination) at least ten years of experience in the examination, testing and evaluation of explosives;

(ii) Does not manufacture or market explosives, and is not controlled by or financially dependent on any entity that manufactures or markets explosives, and whose work with respect to explosives is limited to examination, testing and evaluation; and

(iii) Is a resident of the United States.

(2) A new explosive made by or under the direction or supervision of a component of the DOD may be examined, classed, and concurred in by:

(i) U.S. Army Technical Center for Explosives Safety (SMCAC-EST), Naval Sea Systems Command (SEA-9934), or Air Force Safety Agency (SEW), when approved by the Chairman, DOD Explosives Board, in accordance with the DoD Ammunition and Explosives Hazard Classification Procedures (IBR, see § 171.7 of the subchapter); or

(ii) The agencies and procedures specified in paragraph (b)(1) of this section.

(3) A new explosive made by or under the direction or supervision of the Department of Energy (DOE) may be —

(i) Examined by the DOE in accordance with the DOD Explosives Hazard Classification Procedures, and must be classed and approved by DOE; or

(ii) Examined, classed, and approved in accordance with paragraph (b)(1) of this section.

(4) For a material shipped under the description of “ammonium nitrate-fuel oil mixture (ANFO)”, the only test required for classification purposes is the Cap Sensitivity Test-Test Method 5(a) prescribed in the Explosive Test Manual (UN Manual of Tests and Criteria) (IBR, see § 171.7 of the subchapter). The test must be performed by an agency listed in paragraph (b)(1), (b)(2), or (b)(3) of this section, the manufacturer, or the shipper. A copy of the test report must be submitted to the Associate Administrator before the material is offered for transportation, and a copy of the test report must be retained by the shipper for as long as that material is shipped. At a minimum, the test report must contain the name and address of the person or organization conducting the test, date of the test, quantitative description of the mixture, including prill size and porosity, and a description of the test results.

(c) Filing DOD or DOE approval report. DOD or DOE must file a copy of each approval, accompanied by supporting laboratory data, with the Associate Administrator and receive acknowledgement in writing before offering the new explosive for transportation, unless the new explosive is:

(1) Being transported under paragraph (d) or (e) of this section; or

(2) Covered by a national security classification currently in effect.

(d) Transportation of explosive samples for examination. Notwithstanding the requirements of paragraph (b) of this section with regard to the transportation of a new explosive that has not been approved, a person may offer a sample of a new explosive for transportation, by railroad, highway, or vessel from the place where it was produced to an agency identified in paragraph (b) of this section, for examination if —

(1) The new explosive has been assigned a tentative shipping description and class in writing by the testing agency;

(2) The new explosive is packaged as required by this part according to the tentative description and class assigned, unless otherwise specified in writing by the testing agency; and,

(3) The package is labeled as required by this subchapter and the following is marked on the package:

(i) The words “SAMPLE FOR LABORATORY EXAMINATION”;

(ii) The net weight of the new explosive; and

(iii) The tentative shipping name and identification number.

(e) Transportation of unapproved explosives for developmental testing. Notwithstanding the requirements of paragraph (b) of this section, the owner of a new explosive that has not been examined or approved may transport that new explosive from the place where it was produced to an explosives testing range if —

(1) It is not a primary (a 1.1A initiating) explosive or a forbidden explosive according to this subchapter;

(2) It is described as a Division 1.1 explosive (substance or article) and is packed, marked, labeled, described on shipping papers and is otherwise offered for transportation in conformance with the requirements of this subchapter applicable to Division 1.1;

(3) It is transported in a motor vehicle operated by the owner of the explosive; and

(4) It is accompanied by a person, in addition to the operator of the motor vehicle, who is qualified by training and experience to handle the explosive.

(f) Notwithstanding the requirements of paragraphs (b) and (d) of this section, the Associate Administrator may approve a new explosive on the basis of an approval issued for the explosive by the competent authority of a foreign government, or when examination of the explosive by a person approved by the Associate Administrator is impracticable, on the basis of reports of tests conducted by disinterested third parties, or may approve the transportation of an explosives sample for the purpose of examination by a person approved by the Associate Administrator.

(g) An explosive may be transported under subparts B or C of part 171 or § 176.11 of this subchapter without the approval of the Associate Administrator as required by paragraph (b) of this section if the Associate Administrator has acknowledged in writing the acceptability of an approval issued by the competent authority of a foreign government pursuant to the provisions of the UN Recommendations, the ICAO Technical Instructions, the IMDG Code (IBR, see § 171.7 of this subchapter), or other national or international regulations based on the UN Recommendations. In such a case, a copy of the foreign competent authority approval, and a copy of the written acknowledgement of its acceptance must accompany each shipment of that explosive.

(h) The requirements of this section do not apply to cartridges, small arms which are:

(1) Not a forbidden explosive under § 173.54 of this subchapter;

(2) Ammunition for rifle, pistol, shotgun, or tools;

(3) Ammunition with inert projectile or blank ammunition; and

(4) Ammunition not exceeding 50 caliber for rifle or pistol cartridges or 8 gauge for shotgun shells.

Cartridges, small arms meeting the criteria of this paragraph (h) may be assigned a classification code of 1.4S by the manufacturer.

(i) If experience or other data indicate that the hazard of a material or a device containing an explosive composition is greater or less than indicated according to the definition and criteria specified in §§ 173.50, 173.56, and 173.58 of this subchapter, the Associate Administrator may specify a classification or except the material or device from the requirements of this subchapter.

(j) [Reserved]

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[55 FR 52617 Dec. 21, 1990, as amended at 56 FR 66267, Dec. 20, 1991; 58 FR 51532, Oct. 1, 1993; 62 FR 51554, 51560, Oct. 1, 1997; 63 FR 37454, 37461, July 10, 1998; 64 FR 10742, 10777, Mar. 5, 1999; 66 FR 45376, 45380, Aug. 28, 2001; 68 FR 75734, 75743, Dec. 31, 2003; 72 FR 25162, 25177, May 3, 2007; 78 FR 988, 1074, Jan. 7, 2013.; 78 FR 42457, 42477, July 16, 2013; 83 FR 55792, 55809, Nov. 7, 2018; 85 FR 75680, 75713, Nov. 25, 2020]

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§ 173.57 Acceptance criteria for new explosives.

(a) Unless otherwise excepted, an explosive substance must be subjected to the Drop Weight Impact Sensitivity Test (Test Method 3(a)(i)), the Friction Sensitivity Test (Test Method 3(b)(iii)), the Thermal Stability Test (Test Method 3(c)) at 75°C (167°F) and the Small-Scale Burning Test (Test Method 3(d)(i)), each as described in the Explosive Test Manual (UN Manual of Tests and Criteria) (IBR, see § 171.7 of this subchapter). A substance is forbidden for transportation if any one of the following occurs:

(1) For a liquid, failure to pass the test criteria when tested in the Drop Weight Impact Sensitivity Test apparatus for liquids;

(2) For a solid, failure to pass the test criteria when tested in the Drop Weight Impact Sensitivity Test apparatus for solids;

(3) The substance has a friction sensitiveness equal to or greater than that of dry pentaerythrite tetranitrate (PETN) when tested in the Friction Sensitivity Test;

(4) The substance fails to pass the test criteria specified in the Thermal Stability Test at 75°C (167°F); or

(5) Explosion occurs when tested in the Small-Scale Burning Test.

(b) An explosive article, packaged or unpackaged, or a packaged explosive substance must be subjected to the Thermal Stability Test for Articles and Packaged Articles (Test method 4(a)(i)) and the Twelve Meter Drop Test (Test Method 4(b)(ii)), when appropriate, in the Explosive Test Manual. An article or packaged substance is forbidden for transportation if evidence of thermal instability or excessive impact sensitivity is found in those tests according to the criteria and methods of assessing results prescribed therein.

(c) Dynamite (explosive, blasting, type A) is forbidden for transportation if any of the following occurs:

(1) It does not have, when uniformly mixed with the absorbent material, a satisfactory antacid in a quantity sufficient to have the acid neutralizing power of an amount of magnesium carbonate equal to one percent of the nitroglycerin or other liquid explosive ingredient;

(2) During the centrifuge test (Test Method D-2, in appendix D to this part) or the compression test (Test Method D-3 in appendix D to this part), a non-gelatin dynamite loses more than 3 percent by weight of the liquid explosive or a gelatin dynamite loses more than 10 percent by weight of the liquid explosive; or

(3) During the leakage test (Test Method D-1 in appendix D to this part), there is any loss of liquid.

Statutory Authority

§ 173.57 Acceptance criteria for new explosives.

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[Amdt. 173-224, 55 FR 52617 Dec. 21, 1990, as amended at Amdt. 173-234, 58 FR 51532, Oct. 1, 1993; 64 FR 51912, 51918, Sept. 27, 1999; 68 FR 75734, 75743, Dec. 31, 2003; 76 FR 56304, 56315, Sept. 13, 2011]

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§ 173.58 Assignment of class and division for new explosives.

(a) Division 1.1, 1.2, 1.3, and 1.4 explosives. In addition to the test prescribed in § 173.57 of this subchapter, a substance or article in these divisions must be subjected to Test Methods 6(a), 6(b), and 6(c), as described in the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter), for assignment to an appropriate division. The criteria for assignment of class and division are as follows:

(1) Division 1.1 if the major hazard is mass explosion;

(2) Division 1.2 if the major hazard is dangerous projections;

(3) Division 1.3 if the major hazard is radiant heat or violent burning, or both, but there is no blast or projection hazard;

(4) Division 1.4 if there is a small hazard with no mass explosion and no projection of fragments of appreciable size or range;

(5) Division 1.4 Compatibility Group S (1.4S) if the hazardous effects are confined within the package or the blast and projection effects do not significantly hinder emergency response efforts. The UN Test Type 6(d) is used to determine whether a Division 1.4S classification is appropriate for an item assigned a proper shipping name to which special provision 347 (See § 172.102 of this subchapter) applies; or

(6) Not in the explosive class if the substance or article does not have significant explosive hazard or if the effects of explosion are completely confined within the article.

(b) Division 1.5 explosive. Except for ANFO, a substance that has been examined in accordance with the provisions § 173.57(a) of this subchapter, must be subjected to the following additional tests: Cap Sensitivity Test, Princess Incendiary Spark Test, DDT Test, and External Fire Test, each as described in the Explosive Test Manual. A material may not be classed as a Division 1.5 explosive if any of the following occurs:

(1) Detonation occurs in the Cap Sensitivity Test (Test Method 5(a));

(2) Detonation occurs in the DDT Test (Test Method 5(b)(ii));

(3) An explosion, evidenced by a loud noise and projection of fragments, occurs in the External Fire Test (Test Method 5(c); or

(4) Ignition or explosion occurs in the Princess Incendiary Spark Test (Test Method 5(d)).

(c) Division 1.6 explosive. (1) In order to be classed as a 1.6 explosive, an article must pass all of the following tests, as prescribed in the Explosive Test Manual:

(i) The 1.6 Article External Fire Test;

(ii) The 1.6 Article Slow Cook-off Test;

(iii) The 1.6 Article Propagation Test; and

(iv) The 1.6 Article Bullet Impact Test.

(2) A substance intended for use as the explosive load in an article of Division 1.6 must be an extremely insensitive detonating substance (EIDS). In order to determine if a substance is an EIDS, it must be subjected to the tests in paragraphs (c)(2)(i) through (c)(2)(x) of this section, which are described in the Explosive Test Manual. The substance must be tested in the form (i.e., composition, granulation, density, etc.) in which it is to be used in the article. A substance is not an EIDS if it fails any of the following tests:

(i) The Drop Weight Impact Sensitivity Test;

(ii) The Friction Sensitivity Test;

(iii) The Thermal Sensitivity Test at 75°C (167°F);

(iv) The Small Scale Burning Test;

(v) The EIDS Cap Test;

(vi) The EIDS Gap Test;

(vii) The Susan Test;

(viii) The EIDS Bullet Impact Test;

(ix) The EIDS External Fire Test; and

(x) The EIDS Slow Cook-off Test.

(d) The Associate Administrator may waive or modify certain test(s) identified in § 173.57 and 173.58 of this subchapter, or require additional testing, if appropriate. In addition, the Associate Administrator may limit the quantity of explosive in a device.

(e) Each explosive is assigned a compatibility group letter by the Associate Administrator based on the criteria prescribed in § 173.52(b) of this subchapter.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[Amdt. 173-224, 55 FR 52617 Dec. 21, 1990, as amended at 56 FR 66267, Dec. 20, 1991; 63 FR 52844, 52849, Oct. 1, 1998; 66 FR 45376, 45380, Aug. 28, 2001; 68 FR 75734, 75743, Dec. 31, 2003; 76 FR 3308, Jan. 19, 2011; 76 FR 56304, 56315, Sept. 13, 2011]

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§ 173.59 Description of terms for explosives.

For the purpose of this subchapter, a description of the following terms is provided for information only. They must not be used for purposes of classification or to replace proper shipping names prescribed in §172.101 of this subchapter.

Ammonium-nitrate—fuel oil mixture (ANFO). A blasting explosive containing no essential ingredients other than prilled ammonium nitrate and fuel oil.

Ammunition. Generic term related mainly to articles of military application consisting of all types of bombs, grenades, rockets, mines, projectiles and other similar devices or contrivances.

Ammunition, illuminating, with or without burster, expelling charge or propelling charge. Ammunition designed to produce a single source of intense light for lighting up an area. The term includes illuminating cartridges, grenades and projectiles, and illuminating and target identification bombs. The term excludes the following articles which are listed separately: cartridges, signal; signal devices; hand signals; distress flares, aerial and flares, surface.

Ammunition, incendiary. Ammunition containing an incendiary substance which may be a solid, liquid or gel including white phosphorus. Except when the composition is an explosive per se, it also contains one or more of the following: a propelling charge with primer and igniter charge, or a fuze with burster or expelling charge. The term includes: Ammunition, incendiary, liquid or gel, with burster, expelling charge or propelling charge; Ammunition, incendiary with or without burster, expelling charge or propelling charge; and Ammunition, incendiary, white phosphorus, with burster, expelling charge or propelling charge.

Ammunition, practice. Ammunition without a main bursting charge, containing a burster or expelling charge. Normally it also contains a fuze and propelling charge. The term excludes the following article which is listed separately: Grenades, practice.

Ammunition, proof. Ammunition containing pyrotechnic substance, used to test the performance or strength of new ammunition, weapon component or assemblies.

Ammunition, smoke. Ammunition containing a smoke-producing substance such as chlorosulphonic acid mixture (CSAM), titanium tetrachloride (FM), white phosphorus, or smoke-producing substance whose composition is based on hexachlorothannol (HC) or red phosphorus. Except when the substance is an explosive per se, the ammunition also contains one or more of the following: a propelling charge with primer and igniter charge, or a fuze with burster or expelling charge. The term includes: Ammunition, smoke, with or without burster, expelling charge or propelling charge; Ammunition, smoke, white phosphorus with burster, expelling charge or propelling charge.

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Ammunition, tear-producing with burster, expelling charge or propelling charge. Ammunition containing tear-producing substance. It may also contain one or more of the following: a pyrotechnic substance, a propelling charge with primer and igniter charge, or a fuze with burster or expelling charge.

Ammunition, toxic. Ammunition containing toxic agent. It may also contain one or more of the following: a pyrotechnic substance, a propelling charge with primer and igniter charge, or a fuze with burster or expelling charge.

Articles, explosive, extremely insensitive (Articles, EEI). Articles that contain only extremely insensitive substances and which demonstrate a negligible probability of accidental initiation or propagation under normal conditions of transport and which have passed Test Series 7.

Articles, pyrophoric. Articles which contain a pyrophoric substance (capable of spontaneous ignition when exposed to air) and an explosive substance or component. The term excludes articles containing white phosphorus.

Articles, pyrotechnic for technical purposes. Articles which contain pyrotechnic substances and are used for technical purposes, such as heat generation, gas generation, theatrical effects, etc. The term excludes the following articles which are listed separately: all ammunition; cartridges, signal; cutters, cable, explosive; fireworks; flares, aerial; flares, surface; release devices, explosives; rivets, explosive; signal devices, hand; signals, distress; signals, railway track, explosive; and signals, smoke.

Auxiliary explosive component, isolated. A small device that explosively performs an operation related to the article's functioning, other than its main explosive loads' performance. Functioning of the component does not cause any reaction of the main explosive loads contained within the article.

Black powder (gunpowder). Substance consisting of an intimate mixture of charcoal or other carbon and either potassium or sodium nitrate, and sulphur. It may be meal, granular, compressed, or pelletized.

Bombs. Explosive articles which are dropped from aircraft. They may contain a flammable liquid with bursting charge, a photo-flash composition or bursting charge. The term excludes torpedoes (aerial) and includes bombs, photo-flash; bombs with bursting charge; bombs with flammable liquids, with bursting charge.

Boosters. Articles consisting of a charge of detonating explosive without means of initiation. They are used to increase the initiating power of detonators or detonating cord.

Bursters, explosive. Articles consisting of a small charge of explosive to open projectiles or other ammunition in order to disperse their contents.

Cartridges, blank. Articles that consist of a cartridge case with a center or rim fire primer and a confined charge of smokeless or black powder, but no projectile. Used in training, saluting, or in starter pistols, tools, etc.

Cartridges, flash. Articles consisting of a casing, a primer and flash powder, all assembled in one piece for firing.

Cartridges for weapons.

(1) Fixed (assembled) or semi-fixed (partially assembled) ammunition designed to be fired from weapons. Each cartridge includes all the components necessary to function the weapon once. The name and description should be used for military small arms cartridges that cannot be described as cartridges, small arms. Separate loading ammunition is included under this name and description when the propelling charge and projectile are packed together (see also Cartridges, blank).

(2) Incendiary, smoke, toxic, and tear-producing cartridges are described under ammunition, incendiary, etc.

Cartridges for weapons, inert projectile. Ammunition consisting of a casing with propelling charge and a solid or empty projectile.

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Cartridges, oil well. Articles consisting of a casing of thin fiber, metal or other material containing only propellant explosive. The term excludes charges, shaped, commercial.

Cartridges, power device. Articles designed to accomplish mechanical actions. They consist of a casing with a charge of deflagrating explosive and a means of ignition. The gaseous products of the deflagration produce inflation, linear or rotary motion; activate diaphragms, valves or switches, or project fastening devices or extinguishing agents.

Cartridges, signal. Articles designed to fire colored flares or other signals from signal pistols or devices.

Cartridges, small arms. Ammunition consisting of a cartridge case fitted with a center or rim fire primer and containing both a propelling charge and solid projectile(s). They are designed to be fired in weapons of caliber not larger than 19.1 mm. Shotgun cartridges of any caliber are included in this description. The term excludes: Cartridges, small arms, blank, and some military small arms cartridges listed under Cartridges for weapons, inert projectile.

Cases, cartridge, empty with primer. Articles consisting of a cartridge case made from metal, plastics or other non-flammable materials, in which only the explosive component is the primer.

Cases, combustible, empty, without primer. Articles consisting of cartridge cases made partly or entirely from nitrocellulose.

Charges, bursting. Articles consisting of a charge of detonating explosive such as hexolite, octolite, or plastics-bonded explosive designed to produce effect by blast or fragmentation.

Charges, demolition. Articles consisting of a charge of detonating explosive in a casing of fiberboard, plastics, metal or other material. The term excludes articles identified as bombs, mines, etc.

Charges, depth. Articles consisting of a charge of detonating explosive contained in a drum or projectile. They are designed to detonate under water.

Charges, expelling. A charge of deflagrating explosive designed to eject the payload from the parent article without damage.

Charges, explosive, without detonator. Articles consisting of a charge of detonating explosive without means of initiation, used for explosive welding, joining, forming, and other processes.

Charges, propelling. Articles consisting of propellant charge in any physical form, with or without a casing, for use in cannon or for reducing drag for projectiles or as a component of rocket motors.

Charges, propelling for cannon. Articles consisting of a propellant charge in any physical form, with or without a casing, for use in a cannon.

Charges, shaped, without detonator. Articles consisting of a casing containing a charge of detonating explosive with a cavity lined with rigid material, without means of initiation. They are designed to produce a powerful, penetrating jet effect.

Charges, shaped, flexible, linear. Articles consisting of a V-shaped core of a detonating explosive clad by a flexible metal sheath.

Charges, supplementary, explosive. Articles consisting of a small removable booster used in the cavity of a projectile between the fuze and the bursting charge.

Components, explosive train, n.o.s. Articles containing an explosive designed to transmit a detonation or deflagration within an explosive train.

Consumer firework. Any finished firework device that is in a form intended for use by the public that complies with any limits and requirements of the APA Standard 87– 1A (IBR, see § 171.7 of this subchapter) and the construction, performance, chemical composition, and labeling requirements codified by the U.S. Consumer Product Safety Commission in 16 CFR parts 1500 and 1507. A consumer firework does not include firework devices, kits or components banned by the U.S. Consumer Product Safety Commission in 16 CFR 1500.17(a)(8).

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Contrivance, water-activated with burster, expelling charge or propelling charge. Articles whose functioning depends of physico-chemical reaction of their contents with water.

Cord, detonating, flexible. Articles consisting of a core of detonating explosive enclosed in spun fabric with plastics or other covering.

Cord (fuse) detonating, metal clad. Articles consisting of a core of detonating explosive clad by a soft metal tube with or without protective covering. When the core contains a sufficiently small quantity of explosive, the words “mild effect” are added.

Cord igniter. Articles consisting of textile yarns covered with black powder or another fast-burning pyrotechnic composition and a flexible protective covering, or consisting of a core of black powder surrounded by a flexible woven fabric. It burns progressively along its length with an external flame and is used to transmit ignition from a device to a charge or primer.

Cutters, cable, explosive. Articles consisting of a knife-edged device which is driven by a small charge of deflagrating explosive into an anvil.

Detonator assemblies, non-electric, for blasting. Non-electric detonators assembled with and activated by such means as safety fuse, shock tube, flash tube, or detonating cord. They may be of instantaneous design or incorporate delay elements. Detonating relays incorporating detonating cord are included. Other detonating relays are included in Detonators, nonelectric.

Detonators. Articles consisting of a small metal or plastic tube containing explosives such as lead azide, PETN, or combinations of explosives. They are designed to start a detonation train. They may be constructed to detonate instantaneously or may contain a delay element. They may contain no more than 10 g of total explosives weight, excluding ignition and delay charges, per unit. The term includes: detonators for ammunition; detonators for blasting (electric, electronic, and non-electric); and detonating relays without flexible detonating cord.

Detonators, electronic programmable for blasting. Detonators using electronic components, such as an integrated circuit and/or micro processing technology to provide communications, energy control and storage capability, timing delay information, and validated commands to send a firing signal to the initiating charge.

Dynamite. A detonating explosive containing a liquid explosive ingredient (generally nitroglycerin, similar organic nitrate esters, or both) that is uniformly mixed with an absorbent material, such as wood pulp, and usually contains materials such as nitrocellulose, sodium and ammonium nitrate.

Entire load and total contents. The phrase means such a substantial portion of the material explodes that the practical hazard should be assessed by assuming simultaneous explosion of the whole of the explosive content of the load or package.

Explode. The term indicates those explosive effects capable of endangering life and property through blast, heat, and projection of missiles. It encompasses both deflagration and detonation.

Explosion of the total contents. The phrase is used in testing a single article or package or a small stack of articles or packages.

Explosive, blasting. Detonating explosive substances used in mining, construction, and similar tasks. Blasting explosives are assigned to one of five types. In addition to the ingredients listed below for each type, blasting explosives may also contain inert components, such as kieselguhr, and other minor ingredients, such as coloring agents and stabilizers.

Explosive, blasting, type A. Substances consisting of liquid organic nitrates, such as nitroglycerin, or a mixture of such ingredients with one or more of the following: nitrocellulose, ammonium nitrate or other inorganic nitrates, aromatic nitro-derivatives, or combustible materials, such as wood-meal and aluminum powder. Such explosives must be in powdery, gelatinous, plastic or elastic form. The term includes dynamite, blasting gelatine and gelatine dynamites.

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Explosive, blasting, type B. Substances consisting of a mixture of ammonium nitrate or other inorganic nitrates with an explosive, such as trinitrotoluene, with or without other substances, such as wood-meal or aluminum powder, or a mixture of ammonium nitrate or other inorganic nitrates with other combustible substances which are not explosive ingredients. Such explosives may not contain nitroglycerin, similar liquid organic nitrates, or chlorates.

Explosive, blasting, type C. Substances consisting of a mixture of either potassium or sodium chlorate or potassium, sodium or ammonium perchlorate with organic nitro-derivatives or combustible materials, such as wood-meal or aluminum powder, or a hydrocarbon. Such explosives must not contain nitroglycerin or any similar liquid organic nitrate.

Explosive, blasting, type D. Substances consisting of a mixture of organic nitrate compounds and combustible materials, such as hydrocarbons and aluminum powder. Such explosives must not contain nitroglycerin, any similar liquid organic nitrate, chlorate or ammonium-nitrate. The term generally includes plastic explosives.

Explosive, blasting, type E. Substances consisting of water as an essential ingredient and high proportions of ammonium nitrate or other oxidizer, some or all of which are in solution. The other constituents may include nitro-derivatives, such as trinitrotoluene, hydrocarbons or aluminum powder. The term includes: explosives, emulsion; explosives, slurry; and explosives, watergel.

Explosive, deflagrating. A substance, e.g., propellant, which reacts by deflagration rather than detonation when ignited and used in its normal manner.

Explosive, detonating. A substance which reacts by detonation rather than deflagration when initiated and used in its normal manner.

Explosive, extremely insensitive substance (EIS). A substance that has demonstrated through tests that it is so insensitive that there is very little probability of accidental initiation.

Explosive, primary. Explosive substance which is manufactured with a view to producing a practical effect by explosion, is very sensitive to heat, impact, or friction, and even in very small quantities, detonates. The major primary explosives are mercury fulminate, lead azide, and lead styphnate.

Explosive, secondary. An explosive substance which is relatively insensitive (when compared to primary explosives) and is usually initiated by primary explosives with or without the aid of boosters or supplementary charges. Such an explosive may react as a deflagrating or as a detonating explosive.

Fireworks. Pyrotechnic articles designed for entertainment.

Flares. Articles containing pyrotechnic substances which are designed to illuminate, identify, signal, or warn. The term includes: flares, aerial and flares, surface.

Flash powder. Pyrotechnic substance which, when ignited, produces an intense light.

Fracturing devices, explosive, for oil wells, without detonators. Articles consisting of a charge of detonating explosive contained in a casing without the means of initiation. They are used to fracture the rock around a drill shaft to assist the flow of crude oil from the rock.

Fuse/Fuze. Although these two words have a common origin (French fusee, fusil) and are sometimes considered to be different spellings, it is useful to maintain the convention that fuse refers to a cord-like igniting device, whereas fuze refers to a device used in ammunition which incorporates mechanical, electrical, chemical, or hydrostatic components to initiate a train by deflagration or detonation.

Fuse, igniter. Articles consisting of a metal tube with a core of deflagrating explosives.

Fuse, instantaneous, non-detonating (Quickmatch). Article consisting of cotton yarns impregnated with fine black powder. It burns with an external flame and is used in ignition trains for fireworks, etc.

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Fuse, safety. Article consisting of a core of fine-grained black powder surrounded by a flexible woven fabric with one or more protective outer coverings. When ignited, it burns at a predetermined rate without any explosive effect.

Fuzes. Articles designed to start a detonation or deflagration in ammunition. They incorporate mechanical, electrical, chemical, or hydrostatic components and generally protective features. The term includes: Fuzes, detonating; fuzes detonating with protective features; and fuzes igniting.

Grenades, hand or rifle. Articles which are designed to be thrown by hand or to be projected by rifle. The term includes: grenades, hand or rifle, with bursting charge; and grenades, practice, hand or rifle. The term excludes: grenades, smoke.

Igniters. Articles containing one or more explosive substance used to start deflagration of an explosive train. They may be actuated chemically, electrically, or mechanically. The term excludes: cord, igniter; fuse, igniter; fuse, instantaneous, non-detonating; fuze, igniting; lighters, fuse, instantaneous, non-detonating; fuzes, igniting; lighters, fuse; primers, cap type; and primers, tubular.

Ignition, means of. A general term used in connection with the method employed to ignite a deflagrating train of explosive or pyrotechnic substances (for example: a primer for propelling charge, an igniter for a rocket motor or an igniting fuze).

Initiation, means of.

(1) A device intended to cause the detonation of an explosive (for example: detonator, detonator for ammunition, or detonating fuze).

(2) The term with its own means of initiation means that the contrivance has its normal initiating device assembled to it and this device is considered to present a significant risk during transport but not one great enough to be unacceptable. The term does not apply, however, to a contrivance packed together with its means of initiation, provided the device is packaged so as to eliminate the risk of causing detonation of the contrivance in the event of functioning of the initiating device. The initiating device can even be assembled in the contrivance provided there are protective features ensuring that the device is very unlikely to cause detonation of the contrivance under conditions which are associated with transport.

(3) For the purposes of classification, any means of initiation without two effective protective features should be regarded as Compatibility Group B; an article with its own means of initiation, without two effective protective features, is Compatibility Group F. A means of initiation which itself possesses two effective protective features is Compatibility Group D, and an article with its own means of initiation which possesses two effective features is Compatibility Group D or E. A means of initiation, adjudged as having two effective protective features, must be approved by the Associate Administrator. A common and effective way of achieving the necessary degree of protection is to use a means of initiation which incorporates two or more independent safety features.

Jet perforating guns, charged, oil well, without detonator. Articles consisting of a steel tube or metallic strip, into which are inserted shaped charges connected by detonating cord, without means of initiation.

Lighters, fuse. Articles of various design actuated by friction, percussion, or electricity and used to ignite safety fuse.

Mass explosion. Explosion which affects almost the entire load virtually instantaneously.

Mines. Articles consisting normally of metal or composition receptacles and bursting charge. They are designed to be operated by the passage of ships, vehicles, or personnel. The term includes Bangalore torpedoes.

Phlegmatized. The term means that a substance (or “phlegmatizer”) has been added to an explosive to enhance its safety in handling and transport. The phlegmatizer renders the explosive insensitive, or less sensitive, to the following actions: heat, shock, impact, percussion or friction. Typical phlegmatizing

agents include, but are not limited to: wax, paper, water, polymers (such as chlorofluoropolymers), alcohol and oils (such as petroleum jelly and paraffin).

Powder cake (powder paste). Substance consisting of nitrocellulose impregnated with not more than 60 percent of nitroglycerin or other liquid organic nitrates or a mixture of these.

Powder, smokeless. Substance based on nitrocellulose used as propellant. The term includes propellants with a single base (nitrocellulose (NC) alone), those with a double base (such as NC and nitroglycerin (NG)) and those with a triple base (such as NC/NG/nitroguanidine). Cast pressed or bag-charges of smokeless powder are listed under charges, propelling and charges, propelling for cannon.

Primers, cap type. Articles consisting of a metal or plastic cap containing a small amount of primary explosive mixture that is readily ignited by impact. They serve as igniting elements in small arms cartridges and in percussion primers for propelling charges.

Primers, tubular. Articles consisting of a primer for ignition and an auxiliary charge of deflagrating explosive, such as black powder, used to ignite the propelling charge in a cartridge case for cannon, etc.

Projectiles. Articles, such as a shell or bullet, which are projected from a cannon or other artillery gun, rifle, or other small arm. They may be inert, with or without tracer, or may contain a burster, expelling charge or bursting charge. The term includes: projectiles, inert, with tracer; projectiles, with burster or expelling charge; and projectiles, with bursting charge.

Propellant, liquid. Substances consisting of a deflagrating liquid explosive, used for propulsion.

Propellant, solid. Substances consisting of a deflagrating solid explosive, used for propulsion.

Propellants. Deflagrating explosives used for propulsion or for reducing the drag of projectiles.

Release devices, explosive. Articles consisting of a small charge of explosive with means of initiation. They sever rods or links to release equipment quickly.

Rocket motors. Articles consisting of a solid, liquid, or hypergolic propellant contained in a cylinder fitted with one or more nozzles. They are designed to propel a rocket or guided missile. The term includes: rocket motors; rocket motors with hypergolic liquids with or without an expelling charge; and rocket motors, liquid fuelled.

Rockets. Articles containing a rocket motor and a payload which may be an explosive warhead or other device. The term includes: guided missiles; rockets, line-throwing; rockets, liquid fuelled, with bursting charge; rockets, with bursting charge; rockets, with expelling charge; and rockets, with inert head.

Signals. Articles consisting of pyrotechnic substances designed to produce signals by means of sound, flame, or smoke or any combination thereof. The term includes: signal devices, hand; signals, distress ship; signals, railway track, explosive; signals, smoke.

Sounding devices, explosive. Articles consisting of a charge of detonating explosive. They are dropped from ships and function when they reach a predetermined depth or the sea bed.

Substance, explosive, very insensitive (Substance, EVI) N.O.S. Substances which present a mass explosive hazard but which are so insensitive that there is very little probability of initiation, or of transition from burning to detonation under normal conditions of transport and which have passed test series 5.

Torpedoes. Articles containing an explosive or non-explosive propulsion system and designed to be propelled through water. They may contain an inert head or warhead. The term includes: torpedoes, liquid fuelled, with inert head; torpedoes, liquid fuelled, with or without bursting charge; and torpedoes, with bursting charge.

Tracers for ammunition. Sealed articles containing pyrotechnic substances, designed to reveal the trajectory of a projectile.

Warheads. Articles containing detonating explosives, designed to be fitted to a rocket, guided missile, or torpedo. They may contain a burster or expelling charge or bursting charge. The term includes: warhead rocket with bursting charge; and warheads, torpedo, with bursting charge.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[55 FR 52617 Dec. 21, 1990, as amended at 56 FR 66267, Dec. 20, 1991; 59 FR 67492, Dec. 29, 1994; 64 FR 10742, 10777, Mar. 5, 1999; 66 FR 45177, 45183, 45376, 45380, Aug. 28, 2001; 76 FR 3308, Jan. 19, 2011; 78 FR 988, 1074, Jan. 7, 2013.; 78 FR 42457, 42477, July 16, 2013; 85 FR 75680, 75713, Nov. 25, 2020; 87 FR 44944, 44992, July 26, 2022]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 173.60 General packaging requirements for explosives.

(a) Unless otherwise provided in this subpart and in § 173.7(a), packaging used for Class 1 (explosives) materials must meet Packing Group II requirements. Each packaging used for an explosive must be capable of meeting the test requirements of subpart M of part 178 of this subchapter, at the specified level of performance, and the applicable general packaging requirements of paragraph (b) of this section.

(b) The general requirements for packaging of explosives are as follows:

(1) Nails, staples, and other closure devices, made of metal, having no protective covering may not penetrate to the inside of the outer packaging unless the inner packaging adequately protects the explosive against contact with the metal.

(2) The closure device of containers for liquid explosives must provide double protection against leakage, such as a screw cap secured in place with tape.

(3) Inner packagings, fittings, and cushioning materials, and the placing of explosive substances or articles in packages, must be such that the explosive substance is prevented from becoming loose in the outer packaging during transportation. Metallic components of articles must be prevented from making contact with metal packagings. Articles containing explosive substances not enclosed in an outer casing must be separated from each other in order to prevent friction and impact. Padding, trays, partitioning in the inner or outer packaging, molded plastics or receptacles may be used for this purpose.

(4) When the packaging includes water that could freeze during transportation, a sufficient amount of anti-freeze, such as denatured ethyl alcohol, must be added to the water to prevent freezing. If the anti-freeze creates a fire hazard, it may not be used. When a percentage of water in the substance is specified, the combined weight of water and anti-freeze may be substituted.

(5) If an article is fitted with its own means of ignition or initiation, it must be effectively protected from accidental actuation during normal conditions of transportation.

(6) The entry of explosive substances into the recesses of double-seamed metal packagings must be prevented.

(7) The closure device of a metal drum must include a suitable gasket; if the closure device includes metal-to-metal screw-threads, the ingress of explosive substances into the threading must be prevented.

(8) Whenever loose explosive substances or the explosive substance of an uncased or partly cased article may come into contact with the inner surface of metal packagings (1A2, 1B2, 4A, 4B and metal receptacles), the metal packaging should be provided with an inner liner or coating.

(9) Packagings must be made of materials compatible with, and impermeable to, the explosives contained in the package, so that neither interaction between the explosives and the packaging materials, nor leakage, causes the explosive to become unsafe in transportation, or the hazard division or compatibility group to change (see § 173.24(e)(2)).

(10) An explosive article containing an electrical means of initiation that is sensitive to external electromagnetic radiation, must have its means of initiation effectively protected from electromagnetic radiation sources (for example, radar or radio transmitters) through either design of the packaging or of the article, or both.

(11) Plastic packagings may not be able to generate or accumulate sufficient static electricity to cause the packaged explosive substances or articles to initiate, ignite or inadvertently function. Metal packagings must be compatible with the explosive substance they contain.

(12) Explosive substances may not be packed in inner or outer packagings where the differences in internal and external pressures, due to thermal or other effects, could cause an explosion or rupture of the package.

(13) Packagings for water soluble substances must be water resistant. Packagings for desensitized or phlegmatized substances must be closed to prevent changes in concentration during transport. When containing less alcohol, water, or phlegmatizer than specified in its proper shipping description, the substance is a “forbidden” material.

(14) Large and robust explosives articles, normally intended for military use, without their means of initiation or with their means of initiation containing at least two effective protective features, may be carried unpackaged provided that a negative result was obtained in Test Series 4 of the UN Manual of Tests and Criteria on an unpackaged article. When such articles have propelling charges or are self-propelled, their ignition systems must be protected against conditions encountered during normal transportation. Such unpackaged articles may be fixed to cradles or contained in crates or other suitable handling, storage or launching devices in such a way that they will not become loose during normal conditions of transport and are in accordance with DOD-approved procedures. When such large explosive articles, as part of their operational safety and suitability tests, are subjected to testing that meets the intentions of Test Series 4 of the UN Manual of Tests and Criteria with successful test results, they may be offered for transportation in accordance with the requirements prescribed in (b)(14) above subject to approval by the Associate Administrator.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[Amdt. 173-224, 55 FR 52617 Dec. 21, 1990, as amended at 56 FR 66267, Dec. 20, 1991; Amdt. 173-241, 59 FR 67492, Dec. 29, 1994; Amdt. 173-261, 62 FR 24690, 24719, May 6, 1997; 65 FR 50450, 50461, Aug. 18, 2000; 76 FR 43510, 43529, July 20, 2011]

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§ 173.61 Mixed packaging requirements.

(a) An explosive may not be packed in the same outside packaging with any other material that could, under normal conditions of transportation, adversely affect the explosive or its packaging unless packaged by DOD or DOE in accordance with § 173.7(a).

(b) Hardware necessary for assembly of explosive articles at the point-of-use may be packed in the same outside packaging with the explosive articles. The hardware must be securely packed in a separate inside packaging. Sufficient cushioning materials must be used to ensure that all inside packagings are securely packed in the outside packaging.

(c) The following explosives may not be packed together with other Class 1 explosives: UN 0029, UN 0030, UN 0073, UN 0106, UN 0107, UN 0255, UN 0257, UN 0267, UN 0350, UN 0360, UN 0361, UN 0364, UN 0365, UN 0366, UN 0367, UN 0408, UN 0409, UN 0410, UN 0455, UN 0456, and UN 0500. These explosives may be mix-packed with each other in accordance with the compatibility requirements prescribed in paragraph (e) of this section.

(d) Division 1.1 and 1.2 explosives may not be packed with the following explosives: UN 0333, UN 0334, UN 0335, UN 0336, and UN 0337.

(e) Except as prescribed in paragraphs (c) and (d) of this section, different explosives may be packed in one outside packaging in accordance with the following compatibility requirements:

(1) Explosives of the same compatibility group and same division number may be packed together.

(2) Explosives of the same compatibility group or authorized combination of compatibility group but different division number may be packed together, provided that the whole package is treated as though its entire contents were comprised of the lower division number. For example, a mixed package of Division 1.2 explosives and Division 1.4 explosives, compatibility group D, must be treated as 1.2D explosives. However, when 1.5D explosives are packed together with 1.2D explosives, the whole package must be treated as 1.1D explosives.

(3) Explosives of compatibility group S may be packaged together with explosives of any other compatibility group except A or L, and the combined package may be treated as belonging to any of the packaged compatibility groups except S.

(4) Explosives of compatibility group L shall only be packed with an identical explosive.

(5) Explosives articles of compatibility groups C, D, or E may be packed together and the entire package shall be treated as belonging to compatibility group E.

(6) Explosives articles of compatibility groups C, D, E, or N may be packed together and the entire package shall be treated as belonging to compatibility group D.

(7) Explosives substances of compatibility groups C and D may be packaged together and the entire package shall be treated as belonging to compatibility group D.

(8) Explosive articles of compatibility group G, except for fireworks and articles requiring special packaging, may be packaged together with explosive articles of compatibility groups C, D or E and the combined package shall be treated as belonging to compatibility group E.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[55 FR 52617 Dec. 21, 1990, as amended at 56 FR 66267, Dec. 20, 1991; 65 FR 50450, 50461, Aug. 18, 2000; 66 FR 33316, 33429, June 21, 2001; 66 FR 45376, 45381, Aug. 28, 2001; 69 FR 54042, 54046, Sept. 7, 2004; 73 FR 4699, 4717, Jan. 28, 2008]

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§ 173.62 Specific packaging requirements for explosives.

(a) Except as provided in § 173.7 of this subchapter, when the § 172.101 Table specifies that an explosive must be packaged in accordance with this section, only packagings which conform to the provisions of paragraphs (b) and (c) of this section or § 173.7(e) of this subchapter and the applicable requirements in §§ 173.60 and 173.61 may be used unless otherwise approved by the Associate Administrator.

(b) Explosives Table. The Explosives Table specifies the Packing Instructions assigned to each explosive. Explosives are identified in the first column in numerical sequence by their identification number (ID #), which is listed in column 4 of the § 172.101 Table, of this subchapter. The second column of the Explosives Table specifies the Packing Instruction (PI) which must be used for packaging the explosive. The Explosives Packing Method Table in paragraph (c) of this section defines the methods of packaging. The Packing Instructions are identified using a 3 digit designation. The Packing Instruction prefixed by the letters "US" is particular to the United States and not found in applicable international regulations.

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
UN0004	112
UN0005	130
UN0006	130
UN0007	130
UN0009	130
UN0010	130
UN0012	130
UN0014	130
UN0015	130
UN0016	130
UN0018	130

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
UN0019	130
UN0020	101
UN0021	101
UN0027	113
UN0028	113
UN0029	131
UN0030	131
UN0033	130
UN0034	130
UN0035	130
UN0037	130
UN0038	130
UN0039	130
UN0042	132
UN0043	133
UN0044	133
UN0048	130
UN0049	135
UN0050	135
UN0054	135
UN0055	136
UN0056	130
UN0059	137
UN0060	132
UN0065	139
UN0066	140
UN0070	134
UN0072	112(a)
UN0073	133
UN0074	110(a) or 110(b)

§ 173.62 Specific packaging requirements for explosives.

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
UN0075	115
UN0076	112
UN0077	114(a) or 114(b)
UN0078	112
UN0079	112(b) or 112(c)
UN0081	116
UN0082	116 or 117
UN0083	116
UN0084	116
UN0092	135
UN0093	135
UN0094	113
UN0099	134
UN0101	140
UN0102	139
UN0103	140
UN0104	139
UN0105	140
UN0106	141
UN0107	141
UN0110	141
UN0113	110(a) or 110(b)
UN0114	110(a) or 110(b)
UN0118	112
UN0121	142
UN0124	US1
UN0129	110(a) or

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
	110(b)
UN0130	110(a) or
	110(b)
UN0131	142
UN0132	114(b)
UN0133	112(a)
UN0135	110(a) or
	110(b)
UN0136	130
UN0137	130
UN0138	130
UN0143	115
UN0144	115
UN0146	112
UN0147	112(b)
UN0150	112(a) or
	112(b)
UN0151	112
UN0153	112(b) or
	112(c)
UN0154	112
UN0155	112(b) or
	112(c)
UN0159	111
UN0160	114(b)
UN0161	114(b)
UN0167	130
UN0168	130
UN0169	130
UN0171	130
UN0173	134

§ 173.62 Specific packaging requirements for explosives.

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
UN0174	134
UN0180	130
UN0181	130
UN0182	130
UN0183	130
UN0186	130
UN0190	101
UN0191	135
UN0192	135
UN0193	135
UN0194	135
UN0195	135
UN0196	135
UN0197	135
UN0204	134
UN0207	112(b) or 112(c)
UN0208	112(b) or 112(c)
UN0209	112
UN0212	133
UN0213	112(b) or 112(c)
UN0214	112
UN0215	112
UN0216	112(b) or 112(c)
UN0217	112(b) or 112(c)
UN0218	112(b) or 112(c)

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
UN0219	112
UN0220	112
UN0221	130
UN0222	112(b), 112(c) or 117
UN0224	110(a) or 110(b)
UN0225	133
UN0226	112(a)
UN0234	114(a) or 114(b)
UN0235	114(a) or 114(b)
UN0236	114(a) or 114(b)
UN0237	138
UN0238	130
UN0240	130
UN0241	116 or 117
UN0242	130
UN0243	130
UN0244	130
UN0245	130
UN0246	130
UN0247	101
UN0248	144
UN0249	144
UN0250	101
UN0254	130
UN0255	131

§ 173.62 Specific packaging requirements for explosives.

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
UN0257	141
UN0266	112
UN0267	131
UN0268	133
UN0271	143
UN0272	143
UN0275	134
UN0276	134
UN0277	134
UN0278	134
UN0279	130
UN0280	130
UN0281	130
UN0282	112
UN0283	132
UN0284	141
UN0285	141
UN0286	130
UN0287	130
UN0288	138
UN0289	139
UN0290	139
UN0291	130
UN0292	141
UN0293	141
UN0294	130
UN0295	130
UN0296	134
UN0297	130
UN0299	130
UN0300	130

§ 173.62 Specific packaging requirements for explosives.

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
UN0301	130
UN0303	130
UN0305	113
UN0306	133
UN0312	135
UN0313	135
UN0314	142
UN0315	142
UN0316	141
UN0317	141
UN0318	141
UN0319	133
UN0320	133
UN0321	130
UN0322	101
UN0323	134
UN0324	130
UN0325	142
UN0326	130
UN0327	130
UN0328	130
UN0329	130
UN0330	130
UN0331	116 or 117
UN0332	116 or 117
UN0333	135
UN0334	135
UN0335	135
UN0336	135
UN0337	135
UN0338	130

§ 173.62 Specific packaging requirements for explosives.

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
UN0339	130
UN0340	112(a) or 112(b)
UN0341	112(b)
UN0342	114(a)
UN0343	111
UN0344	130
UN0345	130
UN0346	130
UN0347	130
UN0348	130
UN0349	101
UN0350	101
UN0351	101
UN0352	101
UN0353	101
UN0354	101
UN0355	101
UN0356	101
UN0357	101
UN0358	101
UN0359	101
UN0360	131
UN0361	131
UN0362	130
UN0363	130
UN0364	133
UN0365	133
UN0366	133
UN0367	141
UN0368	141

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
UN0369	130
UN0370	130
UN0371	130
UN0372	141
UN0373	135
UN0374	134
UN0375	134
UN0376	133
UN0377	133
UN0378	133
UN0379	136
UN0380	101
UN0381	134
UN0382	101
UN0383	101
UN0384	101
UN0385	112(b) or 112(c)
UN0386	112(b) or 112(c)
UN0387	112(b) or 112(c)
UN0388	112(b) or 112(c)
UN0389	112(b) or 112(c)
UN0390	112(b) or 112(c)
UN0391	112(a)
UN0392	112(b) or 112(c)

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
UN0393	112(b)
UN0394	112(a)
UN0395	101
UN0396	101
UN0397	101
UN0398	101
UN0399	101
UN0400	101
UN0401	112
UN0402	112(b) or 112(c)
UN0403	135
UN0404	135
UN0405	135
UN0406	114(b)
UN0407	114(b)
UN0408	141
UN0409	141
UN0410	141
UN0411	112(b) or 112(c)
UN0412	130
UN0413	130
UN0414	130
UN0415	143
UN0417	130
UN0418	135
UN0419	135
UN0420	135
UN0421	135
UN0424	130

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
UN0425	130
UN0426	130
UN0427	130
UN0428	135
UN0429	135
UN0430	135
UN0431	135
UN0432	135
UN0433	111
UN0434	130
UN0435	130
UN0436	130
UN0437	130
UN0438	130
UN0439	137
UN0440	137
UN0441	137
UN0442	137
UN0443	137
UN0444	137
UN0445	137
UN0446	136
UN0447	136
UN0448	114(b)
UN0449	101
UN0450	101
UN0451	130
UN0452	141
UN0453	130
UN0454	142
UN0455	131

§ 173.62 Specific packaging requirements for explosives.

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
UN0456	131
UN0457	130
UN0458	130
UN0459	130
UN0460	130
UN0461	101
UN0462	101
UN0463	101
UN0464	101
UN0465	101
UN0466	101
UN0467	101
UN0468	101
UN0469	101
UN0470	101
UN0471	101
UN0472	101
UN0473	101
UN0474	101
UN0475	101
UN0476	101
UN0477	101
UN0478	101
UN0479	101
UN0480	101
UN0481	101
UN0482	101
UN0483	112(b) or 112(c)
UN0484	112(b) or 112(c)

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
UN0485	101
UN0486	101
UN0487	135
UN0488	130
UN0489	112(b) or 112(c)
UN0490	112(b) or 112(c)
UN0491	143
UN0492	135
UN0493	135
UN0494	US1
UN0495	115
UN0496	112(b) or 112(c)
UN0497	115
UN0498	114(b)
UN0499	114(b)
UN0500	131
UN0501	114(b)
UN0502	130
UN0503	135
UN0504	112 (c)
UN0505	135
UN0506	135
UN0507	135
UN0508	114(b)
UN0509	114(b)
UN0510	130
NA0124	US1

Table 1 to Paragraph (b):

Explosives Table

ID#	PI
NA0276	134
NA0323	134
NA0331	116 or 117
NA0337	135
NA0349	133
NA0494	US1

(c) Explosives must be packaged in accordance with the following table:

(1) The first column lists, in alphanumeric sequence, the packing methods prescribed for explosives in the Explosives Table of paragraph (b) of this section.

(2) The second column specifies the inner packagings that are required. If inner packagings are not required, a notation of “Not necessary” appears in the column. The term “Not necessary” means that a suitable inner packaging may be used but is not required.

(3) The third column specifies the intermediate packagings that are required. If intermediate packagings are not required, a notation of “Not necessary” appears in the column. The term “Not necessary” means that a suitable intermediate packaging may be used but is not required.

(4) The fourth column specifies the outer packagings which are required. If inner packagings and/or intermediate packagings are specified in the second and third columns, then the packaging specified in the fourth column must be used as the outer packaging of a combination packaging; otherwise it may be used as a single packaging.

(5) Packing Instruction 101 may be used for any explosive substance or article if an equivalent level of safety is shown to be maintained subject to the approval of the Associate Administrator.

Table 2 to Paragraph (c): Table of Packing Methods

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§ 173.62 Specific packaging requirements for explosives.

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1. A jet perforating gun, charged, oil well may be transported under the following conditions:

a. Initiation devices carried on the same motor vehicle or offshore supply vessel must be segregated; each kind from every other kind, and from any gun, tool or other supplies, unless approved in accordance with § 173.56. Segregated initiation devices must be carried in a container having individual pockets for each such device or in a fully enclosed steel container lined with a non-sparking material. No more than two segregated initiation devices per gun may be carried on the same motor vehicle.

b. Each shaped charge affixed to the gun may not contain more than 112 g (4 ounces) of explosives.

c. Each shaped charge if not completely enclosed in glass or metal, must be fully protected by a metal cover after installation in the gun.

d. A jet perforating gun classed as 1.1D or 1.4D may be transported by highway by private or contract carriers engaged in oil well operations.

(i) A motor vehicle transporting a gun must have specially built racks or carrying cases designed and constructed so that the gun is securely held in place during transportation and is not subject to damage by contact, one to the other or any other article or material carried in the vehicle; and

(ii) The assembled gun packed on the vehicle may not extend beyond the body of the motor vehicle.

e. A jet perforating gun classed as 1.4D may be transported by a private offshore supply vessel only when the gun is carried in a motor vehicle as specified in paragraph (d) of this packing method or on offshore well tool pallets provided that:

(i) All the conditions specified in paragraphs (a), (b), and (c) of this packing method are met;

(ii) The total explosive contents do not exceed 95 kg (209.43 pounds) per tool pallet;

(iii) Each cargo vessel compartment may contain up to 95 kg (209.43 pounds) of explosive content if the segregation requirements in § 176.83(b) of this subchapter are met; and

(iv) When more than one vehicle or tool pallet is stowed “on deck” a minimum horizontal separation of 3 m (9.8 feet) must be provided.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[55 FR 52617, Dec. 21, 1990, as amended at 56 FR 66267, Dec. 20, 1991; 58 FR 50236, Sept. 24, 1993; 58 FR 50502, Sept. 27, 1993; 58 FR 51532, Oct. 1, 1993; 59 FR 67492, 67506, Dec. 29, 1994; 60 FR 26806, May 18, 1995; 60 FR 49106, 49110, Sept. 21, 1995; 62 FR 24690, 24720, May 6, 1997, as corrected at 62 FR 45702, Aug. 28, 1997, as corrected at 63 FR 1884; 62 FR 51554, 51560, Oct. 1, 1997; 63 FR 52844, 52849, Oct. 1, 1998; 64 FR 51912, 51918, Sept. 27, 1999; 65 FR 50450, 50461, Aug. 18, 2000; 65 FR 58614, 58629, Sept. 29, 2000, as corrected at 65 FR 60382, 60383, Oct. 11, 2000; 66 FR 33316, 33429, 33430, June 21, 2001; 66 FR 45177, 45183, 45376, 45380, 45382, Aug. 28, 2001; 68 FR 44992, 45033, July 31, 2003; 68 FR 48562, 48569, Aug. 14, 2003; 68

FR 61906, 61941, Oct. 30, 2003; 69 FR 30588, May 28, 2004; 69 FR 70902, Dec. 8, 2004; 73 FR 4699, 4717, Jan. 28, 2008; 74 FR 2200, 2256, Jan. 14, 2009; 74 FR 53182, 53188, Oct. 16, 2009; 75 FR 63, 72, Jan. 4, 2010.; 75 FR 5376, 5394, Feb. 2, 2010; 76 FR 43510, 43529, July 20, 2011; 76 FR 56304, 56315, Sept. 13, 2011; 78 FR 988, 1074, Jan. 7, 2013.; 78 FR 15303, 15326, Mar. 11, 2013; 78 FR 60745, 60754, Oct. 2, 2013; 78 FR 65454, 65479, Oct. 31, 2013; 80 FR 1076, 1154, Jan. 8, 2015; 81 FR 3636, 3672, Jan. 21, 2016; 82 FR 15796, 15876, Mar. 30, 2017; 85 FR 27810, 27879, May 11, 2020; 85 FR 83366, 83382, Dec. 21, 2020, as corrected at 86 FR 2564, Jan. 13, 2021; 87 FR 79752, 79776, Dec. 27, 2022]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 173.63 Packaging exceptions.

(a) Cord, detonating (UN 0065), having an explosive content not exceeding 6.5 g (0.23 ounces) per 30 centimeter length (one linear foot) may be offered for transportation domestically and transported as Cord, detonating (UN 0289), Division 1.4 Compatibility Group D (1.4D) explosives, if the gross weight of all packages containing Cord, detonating (UN 0065), does not exceed 45 kg (99 pounds) per:

(1) Transport vehicle, freight container, or cargo-only aircraft;

(2) Off-shore down-hole tool pallet carried on an off-shore supply vessel;

(3) Cargo compartment of a cargo vessel; or

(4) Passenger-carrying aircraft used to transport personnel to remote work sites, such as offshore drilling units.

(b) Limited quantities of Cartridges, small arms, Cartridges, power device, Cartridges for tools, blank, and Cases, cartridge, empty with primer.

(1)

(i) Cartridges, small arms, Cartridges, power device (used to project fastening devices), Cartridges for tools, blank, and Cases, cartridge, empty with primer that have been classed as Division 1.4S explosive may be offered for transportation and transported as limited quantities when packaged in accordance with paragraph (b)(2) of this section. Packages containing such articles may be marked with either the marking prescribed in § 172.315(a) or (b) of this subchapter and offered for transportation and transported by any mode. For transportation by aircraft, the package must conform to the applicable requirements of § 173.27 of this part. In addition, packages containing such articles offered for transportation by aircraft must be marked with the proper shipping name as prescribed in the § 172.101 Hazardous Materials Table of this subchapter. Packages containing such articles are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or is offered for transportation and transported by aircraft or vessel. Additionally, packages containing such articles are excepted from the requirements of subparts E (Labeling) and F (Placarding) of part 172 of this subchapter.

(ii) Cartridges, small arms, Cartridges, power device (used to project fastening devices), Cartridges for tools, blank, and Cases, cartridge empty with primer that may be shipped as a limited quantity are as follows:

(A) Ammunition for rifle, pistol or shotgun;

(B) Ammunition with inert projectiles or blank ammunition;

(C) Ammunition having no tear gas, incendiary, or detonating explosive projectiles;

(D) Ammunition not exceeding 12.7 mm (50 caliber or 0.5 inch) for rifle or pistol, cartridges or 8 gauge for shotshells;

(E) Cartridges for tools, blank; and

(F) Cases, cartridge, empty with primer.

(G) Cartridges, power device (used to project fastening devices).

(2) Packaging for Cartridges, small arms, Cartridges for tools, blank, Cases, cartridge empty with primer, and eligible Cartridges, power device as limited quantity must be as follows:

(i) Ammunition must be packed in inside boxes, or in partitions that fit snugly in the outside packaging, or in metal clips;

(ii) Primers must be protected from accidental initiation;

(iii) Inside boxes, partitions or metal clips must be packed in securely-closed strong outside packagings;

(iv) Maximum gross weight is limited to 30 kg (66 pounds) per package; and

(v) Cartridges for tools, blank, Cartridges, power devices which are used to project fastening devices, Cases, cartridge, empty with primer, and 22 caliber rim-fire cartridges may be packaged loose in strong outside packagings.

(c) [Reserved]

(d) Reverse logistics. Hazardous materials meeting the definition of “reverse logistics” under § 171.8 of this subchapter and in compliance with paragraph (b) of this section may be offered for transport and transported in highway transportation in accordance with § 173.157.

(e) [Reserved]

(f) Detonators containing no more than 1 g explosive (excluding ignition and delay charges) that are electric blasting caps with leg wires 4 feet long or longer, delay connectors in plastic sheaths, or blasting caps with empty plastic tubing 12 feet long or longer may be packed as follows in which case they are excepted from the packaging requirements of § 173.62:

(1) No more than 50 detonators in one inner packaging;

(2) IME Standard 22 container (IBR, see § 171.7 of this subchapter) or compartment is used as the outer packaging;

(3) No more than 1000 detonators in one outer packaging; and

(4) No material may be loaded on top of the IME Standard 22 container and no material may be loaded against the outside door of the IME Standard 22 compartment.

(g) Detonators that are classed as 1.4B or 1.4S and contain no more than 1 g of explosive (excluding ignition and delay charges) may be packed as follows in which case they are excepted from the packaging requirements of § 173.62:

(1) No more than 50 detonators in one inner packaging;

(2) IME Standard 22 container is used as the outer packaging;

(3) No more than 1000 detonators in one outer packaging; and

(4) Each inner packaging is marked “I.4B Detonators” or “1.4S Detonators”, as appropriate.

Statutory Authority

§ 173.63 Packaging exceptions.

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[55 FR 52617, Dec. 21, 1990, as amended at 56 FR 66268, Dec. 20, 1991; 58 FR 50536, Sept. 24, 1993; 61 FR 27166, 27175, May 30, 1996; 68 FR 75734, 75743, Dec. 31, 2003; 71 FR 14586, 14602, Mar. 22, 2006; 76 FR 3308, Jan. 19, 2011; 78 FR 988, 1084, Jan. 7, 2013.; 78 FR 1101, 1113, Jan. 7, 2013; 78 FR 65454, 65480, Oct. 31, 2013; 81 FR 18527, 18539, Mar. 31, 2016; 87 FR 79752, 79776, Dec. 27, 2022]

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49 CFR 173.64

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 173.64 Exceptions for Division 1.3 and 1.4 fireworks.

(a) Notwithstanding the requirements of § 173.56(b), Division 1.3 and 1.4 fireworks (see § 173.65 for Division 1.4G consumer fireworks) may be classed and approved by the Associate Administrator without prior examination and offered for transportation if the following conditions are met:

(1) The fireworks are manufactured in accordance with the applicable requirements in APA 87–1A, 87–1B, and 87–1C (IBR, see § 171.7 of this subchapter);

(2) The device must pass a thermal stability test conducted by a third-party laboratory, or the manufacturer. The test must be performed by maintaining the device, or a representative prototype of a large device such as a display shell, at a temperature of 75° C (167° F) for 48 consecutive hours. When a device contains more than one component, those components that could be in physical contact with each other in the finished device must be placed in contact with each other during the thermal stability test;

(3) The manufacturer applies in writing to the Associate Administrator following the applicable requirements in APA 87–1A, 87–1B, and 87–1C and is notified in writing by the Associate Administrator that the fireworks have been classed, approved, and assigned an EX number. Each application must be complete and include all relevant background data and copies of all applicable drawings, test results, and any other pertinent information on each device for which approval is being requested. The manufacturer must sign the application and certify that the device for which approval is requested conforms to the appropriate APA Standard, that the descriptions and technical information contained in the application are complete and accurate, and with respect to APA 87–1A that no duplicate application has been submitted to a fireworks certification agency. If the application is denied, the manufacturer will be notified in writing of the reasons for the denial. The Associate Administrator may require that the fireworks be examined by an agency listed in § 173.56(b)(1) of this part.

(b) [Reserved]

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[78 FR 42457, 42477, July 16, 2013; 85 FR 75680, 75713, Nov. 25, 2020]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 173.65 Exceptions for Division 1.4G consumer fireworks.

(a) Notwithstanding the requirements of §§ 173.56(b), 173.56(f), 173.56(i), and 173.64, Division 1.4G consumer fireworks may be offered for transportation provided the following conditions are met:

(1) The fireworks are manufactured in accordance with the applicable requirements in APA 87–1A (IBR, see § 171.7 of this subchapter);

(2) The device must pass a thermal stability test. The test must be performed by maintaining the device, or a representative prototype of the device, at a temperature of 75° C (167° F) for 48 consecutive hours. When a device contains more than one component, those components that could be in physical contact with each other in the finished device must be placed in contact with each other during the thermal stability test;

(3) The manufacturer of the Division 1.4G consumer firework applies in writing to a DOT-approved Fireworks Certification Agency, and is notified in writing by the DOT-approved Fireworks Certification Agency that the firework has been:

(i) Certified that it complies with APA 87–1A, and meets the requirements of this section; and

(ii) Assigned an FC number.

(4) The manufacturer's application must be complete and include:

(i) Detailed diagram of the device;

(ii) Complete list of the chemical compositions, formulations and quantities used in the device;

(iii) Results of the thermal stability test; and

(iv) Signed certification declaring that the device for which certification is requested conforms to the APA 87–1A, that the descriptions and technical information contained in the application are complete and accurate, and that no duplicate applications have been submitted to PHMSA. If the application is denied, the Fireworks Certification Agency must notify the manufacturer in writing of the reasons for the denial. As detailed in the DOT-approval issued to the Fireworks Certification Agency, following the issuance of a denial from a Fireworks Certification Agency, a manufacturer may seek reconsideration from the Fireworks Certification Agency, or may appeal the reconsideration decision of the Fireworks Certification Agency to the PHMSA Administrator.

(b) Recordkeeping requirements. Following the certification of each Division 1.4G consumer firework as permitted by paragraph (a) of this section, the manufacturer and importer must maintain a paper record or an electronic image of the certificate, demonstrating compliance with this section. Each record must clearly provide the unique identifier assigned to the firework device and the Fireworks Certification Agency that certified the device. The record must be accessible at or through its principal place of business and be made available,

upon request, to an authorized official of a Federal, State, or local government agency at a reasonable time and location. Copies of certification records must be maintained by each importer, manufacturer, or a foreign manufacturer's U.S. agent, for five (5) years after the device is imported. The certification record must be made available to a representative of PHMSA upon request.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[78 FR 42457, 42477, July 16, 2013; 85 FR 75680, 75713, Nov. 25, 2020]

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§ 173.66 Requirements for Bulk Packagings of Certain Explosives and Oxidizers.

When § 172.101 of this subchapter specifies that a hazardous material may be transported in accordance with this section (per special provision 148 in § 172.102(c)(1)), only the bulk packagings specified for these materials in IME Standard 23 (IBR, see § 171.7 of this subchapter) are authorized, subject to the requirements of subparts A and B of this part and the special provisions in Column 7 of the § 172.101 table. See Section I of IME Standard 23 for the standards for transporting a single bulk hazardous material for blasting by cargo tank motor vehicles (CTMV), and Section II of IME Standard 23 for the standards for CTMVs capable of transporting multiple hazardous materials for blasting in bulk and non-bulk packagings (i.e., a multipurpose bulk truck (MBT) authorized to transport the Class 1 (explosive) materials, Division 5.1 (oxidizing) materials, Class 8 (corrosive) materials, and Combustible Liquid, n.o.s., NA1993, III, as specified in IME Standard 23 (also see § 177.835(d) of this subchapter)). In addition, the requirements in paragraph (a) of this section apply to: A new multipurpose bulk truck constructed after April 19, 2016; and a modified existing multipurpose bulk truck after April 19, 2016 (see § 173.66(b) regarding the term modified).

(a) Federal Motor Vehicle Safety Standard (FMVSS). Multipurpose bulk trucks must be in compliance with the FMVSS found in 49 CFR part 571, as applicable. Furthermore, the multipurpose bulk truck manufacturer must maintain a certification record ensuring the final manufacturing is in compliance with the FMVSS, in accordance with the certification requirements found in 49 CFR part 567. These certification records must be made available to DOT representatives upon request.

(b) Modified. The term modified means any change to the original design and construction of a multipurpose bulk truck (MBT) that affects its structural integrity or lading retention capability, (e.g. rechassising, etc.). Excluded from this category are the following:

(1) A change to the MBT equipment such as lights, truck or tractor power train components, steering and brake systems, and suspension parts, and changes to appurtenances, such as fender attachments, lighting brackets, ladder brackets; and

(2) Replacement of components such as valves, vents, and fittings with a component of a similar design and of the same size.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[80 FR 79424, 79453, Dec. 21, 2015]

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49 CFR 173.67

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 173.67 Exceptions for Division 1.1 jet perforating guns.

(a) Notwithstanding the requirements of § 173.56(b), Division 1.1 jet perforating guns may be classed and approved by the Associate Administrator without prior examination and offered for transportation if the following conditions are met:

(1) The jet perforating guns are manufactured in accordance with the applicable requirements in AESC/IME JPG Standard (IBR, see § 171.7 of this subchapter);

(2) The jet perforating gun must be of a type described in the AESC/IME JPG Standard;

(3) The applicant applies in writing to the Associate Administrator following the applicable requirements in the AESC/IME JPG Standard, and is notified in writing by the Associate Administrator that the jet perforating gun has been classed, approved, and assigned an EX number. Each application must be complete and include all relevant background data, the applicable drawings, and any other pertinent information as described in the AESC/IME JPG Standard on each jet perforating gun for which approval is being requested. The manufacturer must sign the application and certify that the jet perforating gun for which approval is requested conforms to the AESC/IME JPG Standard and that the descriptions and technical information contained in the application are complete and accurate. If the application is denied, the applicant will be notified in writing of the reasons for the denial. The Associate Administrator may require that the jet perforating gun be examined as provided under § 173.56(b)(1).

(b) [Reserved]

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 173

History

[85 FR 75680, 75713, Nov. 25, 2020]

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§ 174.81 Segregation of hazardous materials.

(a) This section applies to materials which meet one or more of the hazard classes defined in this subchapter and are in packages which are required to be labeled or placarded under the provisions of part 172 of this subchapter.

(b) When a rail car is to be transported by vessel, other than a ferry vessel, hazardous materials on or within that rail car must be stowed and segregated in accordance with § 176.83(b) of this subchapter.

(c) Except as provided in § 173.12(e) of this subchapter, cyanides, cyanide mixtures or solutions may not be stored, loaded and transported with acids; Division 4.2 materials may not be stored, loaded and transported with Class 8 liquids; and Division 6.1 Packing Group I, Hazard Zone A material may not be stored, loaded and transported with Class 3 material, Class 8 liquids, and Division 4.1, 4.2, 4.3, 5.1 or 5.2 material.

(d) Except as otherwise provided in this subchapter, hazardous materials must be stored, loaded or transported in accordance with the following table and other provisions of this section:

[PUBLISHER'S NOTE: As printed in the GPO edition of the CFR, the following table is too wide to fit on an 80-character screen. Therefore, the table has been reformatted for the screen.]

SEGREGATION TABLE FOR HAZARDOUS MATERIALS

Class or Division		**Notes**	**1.1, 1.2**	**1.3**	**1.4**	**1.5**	**1.6**	**2.1**	**2.2**	**2.3 gas Zone A**
Explosives	1.1 a	A	* $ B *	* $ B *	*	X	X	X		

§ 174.81 Segregation of hazardous materials.

SEGREGATION TABLE FOR HAZARDOUS MATERIALS

Class or Division		**Notes**	**1.1, 1.2**	**1.3**	**1.4**	**1.5**	**1.6**	**2.1**	**2.2**	**2.3 gas Zone A**
	nd 1.2									
Explosives	1.3		* $ B *	* $ B *	*	X		X		
Explosives	1.4		* $ B *	* $ B *	*	O		O		
Very insensitive explosives.	1.5	A	* $ B *	* $ B *	*	X	X	X		
Extremely insensitive explosives.	1.6			* $ B *	* $ B *	* $ B *				
Flammable gases	2.1		X	X	O	X				X

§ 174.81 Segregation of hazardous materials.

SEGREGATION TABLE FOR HAZARDOUS MATERIALS

Class or Division		**Notes**	**1.1, 1.2**	**1.3**	**1.4**	**1.5**	**1.6**	**2.1**	**2.2**	**2.3 gas Zone A**
Non-toxic, non-flammable gases	2.2		X			X				
Poisonous gas Zone A	2.3		X	X	O	X		X		
Poisonous gas Zone B	2.3		X	X	O	X		O		
Flammable liquids	3		X	X	O	X				X
Flammable solids	4.1		X			X				X
Spontaneously combustible materials	4.2		X	X	O	X				X
Dangerous when	4.3		X	X		X				X

§ 174.81 Segregation of hazardous materials.

SEGREGATION TABLE FOR HAZARDOUS MATERIALS

Class or Division		**Notes**	**1.1, 1.2**	**1.3**	**1.4**	**1.5**	**1.6**	**2.1**	**2.2**	**2.3 gas Zone A**
wet materials										
Oxidizers	5.1	A	X	X		X				X
Organic peroxides	5.2		X	X		X				X
Poisonous liquids PG I Zone A.	6.1		X	X	O	X		O		
Radioactive materials	7		X			X		O		
Corrosive liquids	8		X	X	O	X				X

SEGREGATION TABLE FOR HAZARDOUS MATERIALS

Class or Division		**2.3 gas Zone B**	**4.1**	**4.2**	**4.3**	**5.1**	**5.2**	**6.1 liquids PG I**	**8 liquids only**

								Zone A	
Explosives	1.1 and 1.2	X	X	X	X	X	X	X	X
Explosives	1.3	X		X	X	X	X	X	X
Explosives	1.4	O		C				O	O
Very insensitive explosives.	1.5	X	X	X	X	X	X	X	X
Extremely insensitive explosives	1.6								
Flammable gases	2.1	O						O	
Non-toxic, non-flammable gases	2.2								
Poisonous gas Zone A	2.3		X	X	X	X	X		X
Poisonous gas	2		C	C	C	C	C		O

§ 174.81 Segregation of hazardous materials.

	.3									
Zone B										
Flammable liquids	3	O				C		X		
Flammable solids	4.1	O						X		O
Spontaneously combustible materials	4.2	O						X		X
Dangerous when wet materials	4.3	O						X		O
Oxidizers	5.1	O						X		O
Organic peroxides	5.2	O						X		O
Poisonous liquids PG I Zone A.	6.1		X	X	X	X	X			X
Radioactive materials	7									
Corrosive liquids	8	O	C	X	C	C	C	X		

(e) Instructions for using the segregation table for hazardous materials in paragraph (d) of this section are as follows:

(1) The absence of any hazard class or division, or a blank space in the Table indicates that no restrictions apply.

(2) The letter “X” in the Table indicates that these materials may not be loaded, transported, or stored together in the same rail car or storage facility during the course of transportation.

(3) The letter “O” in the Table indicates that these materials may not be loaded, transported, or stored together in the same rail car or storage facility during the course of transportation unless separated in a manner that, in the event of leakage from packages under conditions normally incident to transportation, commingling of hazardous materials would not occur. Notwithstanding the methods of separation employed, Class 8 (corrosive) liquids may not be loaded above or adjacent to Class 4 (flammable) or Class 5 (oxidizing) materials; except that shippers may load carload shipments of such materials together when it is known that the mixture of contents would not cause a fire or a dangerous evolution of heat or gas.

(4) The “*” in the Table indicates that segregation among different Class 1 (explosive) materials is governed by the compatibility table in paragraph (f) of this section.

(5) The note “A” in the second column of the Table means that, notwithstanding the requirements of the letter “X”, ammonium nitrate fertilizer may be loaded or stored with Division 1.1 (explosive) or Division 1.5 materials.

(6) When the § 172.101 Table or § 172.402 of this subchapter requires a package to bear a subsidiary hazard label, segregation appropriate to the subsidiary hazard must be applied when that segregation is more restrictive than that required by the primary hazard. However, hazardous materials of the same class may be loaded and transported together without regard to segregation required by any secondary hazard if the materials are not capable of reacting dangerously with each other and causing combustion or dangerous evolution of heat, evolution of flammable, poisonous, or asphyxiant gases, or formation of corrosive or unstable materials.

(f) Class 1 (explosive) materials may not be loaded, transported, or stored together, except as provided in this section, and in accordance with the following Table:

$

Compatibility Table For Class 1 (Explosive) Materials

Compatibility group	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**J**	**K**	**L**	**N**	**S**
A		X	X	X	X	X	X	X	X	X	X	X	X
B	X		X	4	X	X	X	X	X	X	X	X	4 / 5
C	X	X		2	2	X	6	X	X	X	X	3	4 / 5
D	X	4	2		2	X	6	X	X	X	X	3	4 / 5
E	X	X	2	2		X	6	X	X	X	X	3	4 / 5
F	X	X	X	X	X		X	X	X	X	X	X	4 / 5

$

Compatibility Table For Class 1 (Explosive) Materials

Compatibility group	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**J**	**K**	**L**	**N**	**S**
G	X	X	6	6	6	X		X	X	X	X	X	4/5
H	X	X	X	X	X	X	X		X	X	X	X	4/5
J	X	X	X	X	X	X	X	X		X	X	X	4/5
K	X	X	X	X	X	X	X	X	X		X	X	4/5
L	X	X	X	X	X	X	X	X	X	X	1	X	X
N	X	X	3	3	3	X	X	X	X	X	X		4/5
S	X	4/5	4/5	4/5	4/5	4/5	4/5	4/5	4/5	4/5	X	4/5	

(g) Instructions for using the compatibility table for Class 1 (explosive) materials in paragraph (f) of this section are as follows:

(1) A blank space in the Table indicates that no restrictions apply.

(2) The letter “X” in the Table indicates that explosives of different compatibility groups may not be carried on the same rail car, unless packed in separate freight containers (e.g., two or more freight containers mounted upon the same rail car).

(3) The numbers in the Table mean the following:

(i) “1” means explosives from compatibility group L may only be carried on the same rail car with an identical explosive.

(ii) “2” means any combination of explosives from compatibility group C, D, or E is assigned to compatibility group E.

(iii) “3” means any combination of explosives from compatibility group C, D, or E with those in compatibility group N is assigned to compatibility group D.

(iv) “4” means detonators and detonating primers, Division 1.4S (explosives), may not be loaded in the same car with Division 1.1 and 1.2 (explosive) materials.

(v) “5” means Division 1.4S fireworks may not be loaded in the same car with Division 1.1 or 1.2 (explosive) materials.

(vi) “6” means explosive articles in compatibility group G, other than fireworks and those requiring special stowage, may be loaded and transported with articles of compatibility groups C, D and E, provided no explosive substances are carried in the same rail car.

(h) Except as provided in paragraph (i) of this section, explosives of the same compatibility group but of different divisions may be transported together provided that the whole shipment is transported as though its entire contents were of the lower numerical division (i.e., Division 1.1 being lower than Division 1.2). For example, a mixed shipment of Division 1.2 (explosive) materials and Division 1.4 (explosive) materials, compatibility group D, must be transported as Division 1.2 (explosive) materials.

(i) When Division 1.5 materials, compatibility group D are transported in the same freight container as Division 1.2(explosive) materials, compatibility group D, the shipment must be transported as Division 1.1 (explosive) materials, compatibility group D.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 174

History

[55 FR 52678, Dec. 21, 1990, as amended at 56 FR 66280-66281, Dec. 20, 1991; 57 FR 45464, Oct. 1, 1992; 57 FR 59310, Dec. 15, 1992; 58 FR 50237, Sept. 24, 1993; 61 FR 51334, 51339, Oct. 1, 1996; 64 FR 10742, 10781, Mar. 5, 1999; 66 FR 45376, 45383, Aug. 28, 2001; 67 FR 15736, 15743, Apr. 3, 2002; 70 FR 3302, 3310, Jan. 24, 2005; 75 FR 27205, 27215, May 14, 2010]

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Part 177 — Carriage by Public Highway

Statutory Authority

AUTHORITY NOTE APPLICABLE TO ENTIRE PART:

49 U.S.C. 5101-5128; sec. 112 of Pub. L. 103-311, 108 Stat. 1673, 1676 (1994); sec. 32509 of Pub. L. 112-141, 126 Stat. 405, 805 (2012); 49 CFR 1.81 and 1.97.]

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49 CFR 177.800

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.800 Purpose and scope of this part and responsibility for compliance and training.

(a) Purpose and scope. This part prescribes requirements, in addition to those contained in parts 171, 172, 173, 178 and 180 of this subchapter, that are applicable to the acceptance and transportation of hazardous materials by private, common or contract carriers by motor vehicle.

(b) Responsiblity for compliance. Unless this subchapter specifically provides that another person shall perform a particular duty, each carrier, including a connecting carrier, shall perform the duties specified and comply with all applicable requirements in this part and shall ensure its hazmat employees receive training in relation thereto.

(c) Responsibility for training. A carrier may not transport a hazardous material by motor vehicle unless each of its hazmat employees involved in that transportation is trained as required by this part and subpart H of part 172 of this subchapter.

(d) No unnecessary delay in movement of shipments. All shipments of hazardous materials must be transported without unnecessary delay, from and including the time of commencement of the loading of the hazardous material until its final unloading at destination.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[Amdt. 177-79, 54 FR 20954, May 15, 1992; Doc. No. HM-222A, Amdt. No. 177-86, 61 FR 18926, 18933, Apr. 29, 1996]

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49 CFR 177.801

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.801 Unacceptable hazardous materials shipments.

No person may accept for transportation or transport by motor vehicle a forbidden material or hazardous material that is not prepared in accordance with the requirements of this subchapter.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[Amdt. 177-71, 54 FR 25015, June 12, 1989; Amdt. 177-87, 61 FR 27166, 27175, May 30, 1996]

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49 CFR 177.802

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.802 Inspection.

Records, equipment, packagings and containers under the control of a motor carrier, insofar as they affect safety in transportation of hazardous materials by motor vehicle, must be made available for examination and inspection by a duly authorized representative of the Department.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[Amdt. 177-71, 54 FR 25015, June 12, 1989]

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49 CFR 177.804

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.804 Compliance with Federal Motor Carrier Safety Regulations.

(a) General. Motor carriers and other persons subject to this part must comply with 49 CFR part 383 and 49 CFR parts 390 through 397 (excluding §§ 397.3 and 397.9) to the extent those regulations apply.

(b) Additional prohibitions. A person transporting a quantity of hazardous materials requiring placarding under 49 CFR part 172 or any quantity of a material listed as a select agent or toxin in 42 CFR part 73:

(1) Must comply with the safe clearance requirements for highway-rail grade crossings in § 392.12 of this title;

(2) May not engage in, allow, or require texting while driving, in accordance with § 392.80 of this title; and

(3) May not engage in, allow, or require the use of a hand-held mobile telephone while driving, in accordance with § 392.82 of this title.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[58 FR 50505, Sept. 27, 1993; 68 FR 23832, 23842, May 5, 2003, as confirmed at 69 FR 6195, 6198, Feb. 10, 2004; 76 FR 10771, 10778, Feb. 28, 2011; 76 FR 75470, 75485, Dec. 2, 2011; 78 FR 58915, 58923, Sept. 25, 2013]

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49 CFR 177.810

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.810 Vehicular tunnels.

Except as regards Class 7 (radioactive) materials, nothing contained in parts 170-189 of this subchapter shall be so construed as to nullify or supersede regulations established and published under authority of State statute or municipal ordinance regarding the kind, character, or quantity of any hazardous material permitted by such regulations to be transported through any urban vehicular tunnel used for mass transportation.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[Amdt. 177-52, 46 FR 5316, Jan. 19, 1981, as amended by Amdt. 177-78, 55 FR 52710, Dec. 21, 1990; 62 FR 51554, 51561, Oct. 1, 1997]

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§ 177.816 Driver training.

(a) In addition to the training requirements of § 177.800, no carrier may transport, or cause to be transported, a hazardous material unless each hazmat employee who will operate a motor vehicle has been trained in the applicable requirements of 49 CFR parts 390 through 397 and the procedures necessary for the safe operation of that motor vehicle. Driver training shall include the following subjects:

(1) Pre-trip safety inspection;

(2) Use of vehicle controls and equipment, including operation of emergency equipment;

(3) Operation of vehicle, including turning, backing, braking, parking, handling, and vehicle characteristics including those that affect vehicle stability, such as effects of braking and curves, effects of speed on vehicle control, dangers associated with maneuvering through curves, dangers associated with weather or road conditions that a driver may experience (e.g., blizzards, mountainous terrain, high winds), and high center of gravity;

(4) Procedures for maneuvering tunnels, bridges, and railroad crossings;

(5) Requirements pertaining to attendance of vehicles, parking, smoking, routing, and incident reporting; and

(6) Loading and unloading of materials, including —

(i) Compatibility and segregation of cargo in a mixed load;

(ii) Package handling methods; and

(iii) Load securement.

(b) Specialized requirements for cargo tanks and portable tanks. In addition to the training requirement of paragraph (a) of this section, each person who operates a cargo tank or a vehicle with a portable tank with a capacity of 1,000 gallons or more must receive training applicable to the requirements of this subchapter and have the appropriate State-issued commercial driver's license required by 49 CFR part 383. Specialized training shall include the following:

(1) Operation of emergency control features of the cargo tank or portable tank;

(2) Special vehicle handling characteristics, including: high center of gravity, fluid load subject to surge, effects of fluid-load surge on braking, characteristic differences in stability among baffled, unbaffled, and multi-compartmented tanks; and effects of partial loads on vehicle stability;

(3) Loading and unloading procedures;

(4) The properties and hazards of the material transported; and

(5) Retest and inspection requirements for cargo tanks.

(c) The training required by paragraphs (a) and (b) of this section may be satisfied by compliance with the current requirements for a Commercial Driver's License (CDL) with a tank vehicle or hazardous materials endorsement.

(d) Training required by paragraph (b) of this section must conform to the requirements of § 172.704 of this subchapter with respect to frequency and recordkeeping.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[55 FR 52710 (1990); Amdt. 177-79, 57 FR 20954, May 15, 1992; Amdt. 177-79, 58 FR 5852, Jan. 22, 1993]

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§ 177.817 Shipping papers.

(a) General requirements. A person may not accept a hazardous material for transportation or transport a hazardous material by highway unless that person has received a shipping paper prepared in accordance with part 172 of this subchapter or the material is excepted from shipping paper requirements under this subchapter. A subsequent carrier may not transport a hazardous material unless it is accompanied by a shipping paper prepared in accordance with part 172 of this subchapter, except for § 172.204, which is not required.

(b) Shipper certification. An initial carrier may not accept a hazardous material offered for transportation unless the shipping paper describing the material includes a shipper's certification which meets the requirements in § 172.204 of this subchapter. Except for a hazardous waste, the certification is not required for shipments to be transported entirely by private carriage and for bulk shipments to be transported in a cargo tank supplied by the carrier.

(c) Requirements when interlining with carriers by rail. A motor carrier shall mark on the shipping paper required by this section, if it offers or delivers a freight container or transport vehicle to a rail carrier for further transportation;

(1) A description of the freight container or transport vehicle; and

(2) The kind of placard affixed to the freight container or transport vehicle.

(d) Applicability. This section does not apply to a material that is excepted from shipping paper requirements as specified in § 172.200 of this subchapter.

(e) Shipping paper accessibility — accident or inspection. A driver of a motor vehicle containing hazardous material, and each carrier using such a vehicle, shall ensure that the shipping paper required by this section is readily available to, and recognizable by, authorities in the event of accident or inspection. Specifically, the driver and the carrier shall:

(1) Clearly distinguish the shipping paper, if it is carried with other shipping papers or other papers of any kind, by either distinctively tabbing it or by having it appear first; and

(2) Store the shipping paper as follows:

(i) When the driver is at the vehicle's controls, the shipping paper shall be: (A) Within his immediate reach while he is restrained by the lap belt; and (B) either readily visible to a person entering the driver's compartment or in a holder which is mounted to the inside of the door on the driver's side of the vehicle.

(ii) When the driver is not at the vehicle's controls, the shipping paper shall be: (A) In a holder which is mounted to the inside of the door on the driver's side of the vehicle; or (B) on the driver's seat in the vehicle.

(f) Retention of shipping papers. Each person receiving a shipping paper required by this section must retain a copy or an electronic image thereof, that is accessible at or through its principal place of business and must make the shipping paper available, upon request, to an authorized official of a Federal, State, or local government agency at reasonable times and locations. For a hazardous waste, the shipping paper copy must be retained for three years after the material is accepted by the initial carrier. For all other hazardous materials, the shipping paper copy must be retained for one year after the material is accepted by the carrier. Each shipping paper copy must include the date of acceptance by the carrier. A motor carrier (as defined in § 390.5 of subchapter B of chapter III of subtitle B) using a shipping paper without change for multiple shipments of one or more hazardous materials having the same shipping name and identification number may retain a single copy of the shipping paper, instead of a copy for each shipment made, if the carrier also retains a record of each shipment made that includes shipping name, identification number, quantity transported, and date of shipment.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[41 FR 16130, Apr. 15, 1976, as amended by 41 FR 40691, Sept. 20, 1976; 45 FR 47670, Nov. 10, 1980; 50 FR 11055, Mar. 19, 1985; 53 FR 17160, May 13, 1988; 67 FR 46123, 46128, July 12, 2002; 67 FR 66571, 66574, Nov. 1, 2002; 68 FR 19258, 19277, Apr. 18, 2003; 68 FR 57629, 57633, Oct. 6, 2003; 70 FR 73156, 73165, Dec. 9, 2005; 87 FR 79752, 79784, Dec. 27, 2022]

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49 CFR 177.823

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.823 Movement of motor vehicles in emergency situations.

(a) A carrier may not move a transport vehicle containing a hazardous material unless the vehicle is marked and placarded in accordance with part 172 or as authorized in § 171.12a of this subchapter, or unless, in an emergency:

(1) The vehicle is escorted by a representative of a state or local government;

(2) The carrier has permission from the Department; or

(3) Movement of the transport vehicle is necessary to protect life or property.

(b) Disposition of contents of cargo tank when unsafe to continue. In the event of a leak in a cargo tank of such a character as to make further transportation unsafe, the leaking vehicle should be removed from the traveled portion of the highway and every available means employed for the safe disposal of the leaking material by preventing, so far as practicable, its spread over a wide area, such as by digging trenches to drain to a hole or depression in the ground, diverting the liquid away from streams or sewers if possible, or catching the liquid in containers if practicable. Smoking, and any other source of ignition, in the vicinity of a leaking cargo tank is not permitted.

(c) Movement of leaking cargo tanks. A leaking cargo tank may be transported only the minimum distance necessary to reach a place where the contents of the tank or compartment may be disposed of safely. Every available means must be utilized to prevent the leakage or spillage of the liquid upon the highway.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[Amdt. 177-35, 41 FR 16130, Apr. 15, 1976, as amended by Amdt. 177-67, 50 FR 41521, Oct. 11, 1985; Doc. No. HM-222A, Amdt. No. 177-86, 61 FR 18926, 18933, Apr. 29, 1996]

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Subpart B — Loading and Unloading

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.834 General requirements.

(a) Packages secured in a motor vehicle. Any package containing any hazardous material, not permanently attached to a motor vehicle, must be secured against shifting, including relative motion between packages, within the vehicle on which it is being transported, under conditions normally incident to transportation. Packages having valves or other fittings must be loaded in a manner to minimize the likelihood of damage during transportation.

(b) Each package containing a hazardous material bearing package orientation markings prescribed in § 172.312 of this subchapter must be loaded on a transport vehicle or within a freight container in accordance with such markings and must remain in the correct position indicated by the markings during transportation.

(c) No smoking while loading or unloading. Smoking on or about any motor vehicle while loading or unloading any Class 1 (explosive), Class 3 (flammable liquid), Class 4 (flammable solid), Class 5 (oxidizing), or Division 2.1 (flammable gas) materials is forbidden.

(d) Keep fire away, loading and unloading. Extreme care shall be taken in the loading or unloading of any Class 1 (explosive), Class 3 (flammable liquid), Class 4 (flammable solid), Class 5 (oxidizing), or Division 2.1 (flammable gas) materials into or from any motor vehicle to keep fire away and to prevent persons in the vicinity from smoking, lighting matches, or carrying any flame or lighted cigar, pipe, or cigarette.

(e) Handbrake set while loading and unloading. No hazardous material shall be loaded into or on, or unloaded from, any motor vehicle unless the handbrake be securely set and all other reasonable precautions be taken to prevent motion of the motor vehicle during such loading or unloading process.

(f) Use of tools, loading and unloading. No tools which are likely to damage the effectiveness of the closure of any package or other container, or likely adversely to affect such package or container, shall be used for the loading or unloading of any Class 1 (explosive) material or other dangerous article.

(g) [Reserved]

(h) Precautions concerning containers in transit; fueling road units. Reasonable care should be taken to prevent undue rise in temperature of containers and their contents during transit. There must be no tampering with such container or the contents thereof nor any discharge of the contents of any container between point of origin and point of billed destination. Discharge of contents of any container, other than a cargo tank or IM portable tank, must not be made prior to removal from the motor vehicle. Nothing contained in this paragraph shall be so construed as to prohibit the fueling of machinery or vehicles used in road construction or maintenance.

(i) Attendance requirements.

(1) Loading. A cargo tank must be attended by a qualified person at all times when it is being loaded. The person who is responsible for loading the cargo tank is also responsible for ensuring that it is so attended.

(2) Unloading. A motor carrier who transports hazardous materials by a cargo tank must ensure that the cargo tank is attended by a qualified person at all times during unloading. However, the carrier's obligation to ensure attendance during unloading ceases when:

(i) The carrier's obligation for transporting the materials is fulfilled;

(ii) The cargo tank has been placed upon the consignee's premises; and

(iii) The motive power has been removed from the cargo tank and removed from the premises.

(3) A qualified person "attends" the loading or unloading of a cargo tank only if, throughout the process:

(i) Except for unloading operations subject to §§ 177.837(d) and 177.840(p) and (q), the qualified person is within 7.62 m (25 feet) of the cargo tank. The qualified person attending the unloading of a cargo tank must be alert and have an unobstructed view of the cargo tank and delivery hose to the maximum extent practicable during the unloading operation; or

(ii) The qualified person observes all loading or unloading operations by means of video cameras and monitors or instrumentation and signaling systems such as sensors, alarms, and electronic surveillance equipment located at a remote control station, and the loading or unloading system is equipped as follows:

(A) For a video monitoring system used to meet the attendance requirement, the camera must be mounted so as to provide an unobstructed view of all equipment involved in the loading or unloading operations, including all valves, hoses, domes, and pressure relief devices;

(B) For an instrumentation and signaling system used to meet the attendance requirement, the system must provide a surveillance capability at least equal to that of a human observer;

(C) Upon loss of video monitoring capability or instrumentation and signaling systems, loading or unloading operations must be immediately terminated;

(D) Shut-off valves operable from the remote control station must be provided;

(E) In the event of a remote system failure, a qualified person must immediately resume attending the loading or unloading of the cargo tank as provided in paragraph (i)(3)(i) of this section;

(F) A containment area must be provided capable of holding the contents of as many cargo tank motor vehicles as might be loaded at any single time; and

(G) A qualified person must personally conduct a visual inspection of each cargo tank motor vehicle after it is loaded, prior to departure, for any damage that may have occurred during loading; or

(iii) Hoses used in the loading or unloading operations are equipped with cable-connected wedges, plungers, or flapper valves located at each end of the hose, able to stop the flow of product from both the source and the receiving tank within one second without human intervention in the event of a hose rupture, disconnection, or separation.

(A) Prior to each use, each hose must be inspected to ensure that it is of sound quality, without defects detectable through visual observation; and

(B) The loading or unloading operations must be physically inspected by a qualified person at least once every sixty (60) minutes.

(4) A person is "qualified" if he has been made aware of the nature of the hazardous material which is to be loaded or unloaded, has been instructed on the procedures to be followed in emergencies, and except for persons observing loading or unloading operations by means of video cameras and monitors or instrumentation and signaling systems such as sensors, alarms, and electronic surveillance equipment located at a remote control station and persons inspecting hoses in accordance with paragraph (i)(3)(iii) of this section, is authorized to move the cargo tank, and has the means to do so.

(j) Except for a cargo tank conforming to § 173.29(b)(2) of this subchapter, a person may not drive a cargo tank motor vehicle containing a hazardous material regardless of quantity unless:

(1) All manhole closures are closed and secured; and

(2) All valves and other closures in liquid discharge systems are closed and free of leaks, except external emergency self-closing valves on MC 338 cargo tanks containing the residue of cryogenic liquids may remain either open or closed during transit.

(k) [Reserved]

(l) Use of cargo heaters when transporting certain hazardous material. Transportation includes loading, carrying, and unloading.

(1) When transporting Class 1 (explosive) materials. A motor vehicle equipped with a cargo heater of any type may transport Class 1 (explosive) materials only if the cargo heater is rendered inoperable by: (i) Draining or removing the cargo heater fuel tank; and (ii) disconnecting the heater's power source.

(2) When transporting certain flammable material.

(i) Use of combustion cargo heaters. A motor vehicle equipped with a combustion cargo heater may be used to transport Class 3 (flammable liquid) or Division 2.1 (flammable gas) materials only subject to the following conditions:

(A) The combustion cargo heater is powered by diesel fuel or propane and each of the following requirements are met:

(1) Electrical apparatus in the cargo compartment is non-sparking or explosion proof.

(2) There is no combustion apparatus in the cargo compartment.

(3) There is no connection for return of air from the cargo compartment to the combustion apparatus.

(4) The heating system will not heat any part of the cargo to more than 54° C (130° F).

(5) Heater requirements under § 393.77 of this title are complied with.

(6) The heater unit and its fuel supply must be externally mounted on the truck or trailer.

(7) The heater unit must retain combustion in a sealed combustion chamber.

(8) The heater unit must utilize outside air for combustion (air from the cargo space cannot be used for combustion).

(9) Heater unit combustion gases must be exhausted to the outside of the truck or trailer.

(B) The combustion cargo heater is a catalytic heater and each of the following requirements are met:

(1) The heater's surface temperature cannot exceed 54° C (130° F) — either on a thermostatically controlled heater or on a heater without thermostatic control when the outside or ambient temperature is 16° C (61° F) or less.

(2) The heater is not ignited in a loaded vehicle.

(3) There is no flame, either on the catalyst or anywhere in the heater.

(4) The manufacturer has certified that the heater meets the requirements under paragraph (l)(2)(i)(B) of this section by permanently marking the heater "MEETS DOT REQUIREMENTS FOR CATALYTIC HEATERS USED WITH FLAMMABLE LIQUID AND GAS."

(5) The heater is also marked " DO NOT LOAD INTO OR USE IN CARGO COMPARTMENTS CONTAINING FLAMMABLE LIQUID OR GAS IF FLAME IS VISIBLE ON CATALYST OR IN HEATER."

(6) Heater requirements under § 393.77 of this title are complied with.

(ii) [Reserved]

(iii) Restrictions on automatic cargo-space-heating temperature control devices. Restrictions on these devices have two dimensions: Restrictions upon use and restrictions which apply when the device must not be used.

(A) Use restrictions. An automatic cargo-space-heating temperature control device may be used when transporting Class 3 (flammable liquid) or Division 2.1 (flammable gas) materials only if each of the following requirements is met:

(1) Electrical apparatus in the cargo compartment is nonsparking or explosion proof.

(2) There is no combustion apparatus in the cargo compartment.

(3) There is no connection for return of air from the cargo compartment to the combustion apparatus.

(4) The heating system will not heat any part of the cargo to more than 54°C (129°F).

(5) Heater requirements under § 393.77 of this title are complied with.

(B) Protection against use. Class 3 (flammable liquid) or Division 2.1 (flammable gas) materials may be transported by a vehicle, which is equipped with an automatic cargo-space-heating temperature control device that does not meet each requirement of paragraph (l)(2)(iii)(A) of this section, only if the device is first rendered inoperable, as follows:

(1) Each cargo heater fuel tank, if other than LPG, must be emptied or removed.

(2) Each LPG fuel tank for automatic temperature control equipment must have its discharge valve closed and its fuel feed line disconnected.

(m) Tanks constructed and maintained in compliance with Spec. 106A or 110A (§§ 179.300, 179.301 of this subchapter) that are authorized for the shipment of hazardous materials by highway in part 173 of this subchapter must be carried in accordance with the following requirements:

(1) Tanks must be securely chocked or clamped on vehicles to prevent any shifting.

(2) Equipment suitable for handling a tank must be provided at any point where a tank is to be loaded upon or removed from a vehicle.

(3) No more than two cargo carrying vehicles may be in the same combination of vehicles.

(4) Compliance with §§ 174.200 and 174.204 of this subchapter for combination rail freight, highway shipments and for trailer-on-flat-car service is required.

(n) Specification 56, 57, IM 101, and IM 102 portable tanks, when loaded, may not be stacked on each other nor placed under other freight during transportation by motor vehicle.

(o) Unloading of IM and UN portable tanks. No person may unload an IM or UN portable tank while it remains on a transport vehicle with the motive power unit attached except under the following conditions:

(1) The unloading operation must be attended by a qualified person in accordance with the requirements in paragraph (i) of this section. The person performing unloading functions must be trained in handling emergencies that may occur during the unloading operation.

(2) Prior to unloading, the operator of the vehicle on which the portable tank is transported must ascertain that the conditions of this paragraph (o) are met.

(3) An IM or UN portable tank equipped with a bottom outlet as authorized in Column (7) of the § 172.101 Table of this subchapter by assignment of a T Code in the appropriate proper shipping name entry, and that contains a liquid hazardous material of Class 3, PG I or II, or PG III with a flash point of less than 100° F (38° C); Division 5.1, PG I or II; or Division 6.1, PG I or II, must conform to the outlet requirements in § 178.275(d)(3) of this subchapter.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[29 FR 18795, Dec. 29, 1964, redesignated at 32 FR 5606, Apr. 5, 1967; 52 FR 13044 (1988); 55 FR 52710 (1990); 58 FR 51533, Oct. 1, 1993; 61 FR 27166, 27175, May 30, 1996; 63 FR 37454, 37462, July 10, 1998; 64 FR 28030, 28048, May 24, 1999; 65 FR 50450, 50462, Aug. 18, 2000; 66 FR 45376, 45385, Aug. 28, 2001; 67 FR 53118, 53142, Aug. 14, 2002, as corrected at 67 FR 54967, Aug. 27, 2002; 68 FR 19258, 19277, Apr. 18, 2003; 68 FR 32409, 32414, May 30, 2003; 68 FR 48562, 48570, Aug. 14, 2003; 68 FR 61906, 61942, Oct. 30, 2003; 69 FR 30588, May 28, 2004; 69 FR 70902, Dec. 8, 2004; 76 FR 56304, 56317, Sept. 13, 2011; 78 FR 15303, 15328, Mar. 11, 2013; 81 FR 3636, 3683, Jan. 21, 2016; 81 FR 35484, 35544, June 2, 2016]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.835 Class 1 (explosive) materials.

(See also § 177.834 (a) to (j).)

(a) Engine stopped. No Class 1 (explosive) materials may be loaded into or on or be unloaded from any motor vehicle with the engine running, except that the engine of a multipurpose bulk truck (see paragraph (d) of this section) and the engine of a cargo tank motor vehicle transporting a single bulk hazardous material for blasting may be used for the operation of the pumping equipment of the vehicle during loading or unloading.

(b) Care in loading, unloading, or other handling of Class 1 (explosive) materials. No bale hooks or other metal tools shall be used for the loading, unloading, or other handling of Class 1 (explosive) materials, nor shall any package or other container of Class 1 (explosive) materials, except barrels or kegs, be rolled. No packages of Class 1 (explosive) materials shall be thrown or dropped during process of loading or unloading or handling of Class 1 (explosive) materials. Special care shall be exercised to the end that packages or other containers containing Class 1 (explosive) materials shall not catch fire from sparks or hot gases from the exhaust tailpipe.

(1) Whenever tarpaulins are used for covering Class 1 (explosive) materials, they shall be secured by means of rope, wire, or other equally efficient tie downs. Class 1 (explosive) materials placards or markings required by § 177.823 shall be secured, in the appropriate locations, directly to the equipment transporting the Class 1 (explosive) materials. If the vehicle is provided with placard boards, the placards must be applied to these boards.

(2) [Reserved]

(c) Class 1 (explosive) materials on vehicles in combination. Division 1.1 or 1.2 (explosive) materials may not be loaded into or carried on any vehicle or a combination of vehicles if:

(1) More than two cargo carrying vehicles are in the combination;

(2) Any full trailer in the combination has a wheel base of less than 184 inches;

(3) Any vehicle in the combination is a cargo tanks which is required to be marked or placarded under § 177.823; or

(4) The other vehicle in the combination contains any:

(i) Substances, explosive, n.o.s., Division 1.1A (explosive) material (Initiating explosive),

(ii) Packages of Class 7 (radioactive) materials bearing "Yellow III" labels,

(iii) Division 2.3, Hazard Zone A or Hazard Zone B materials or Division 6.1, PG I, Hazard Zone A materials, or

(iv) Hazardous materials in a portable tank or a DOT specification 106A or 110A tank.

§ 177.835 Class 1 (explosive) materials.

(d) Multipurpose bulk trucks. When § 172.101 of this subchapter specifies that Class 1 (explosive) materials may be transported in accordance with § 173.66 of this subchapter (per special provision 148 in § 172.102(c)(1)), these materials may be transported on the same vehicle with Division 5.1 (oxidizing) materials, or Class 8 (corrosive) materials, and/or Combustible Liquid, n.o.s., NA1993 only under the conditions and requirements set forth in IME Standard 23 (IBR, see § 171.7 of this subchapter) and paragraph (g) of this section. In addition, the segregation requirements in § 177.848 do not apply.

(e) No sharp projections inside body of vehicles. No motor vehicle transporting any kind of Class 1 (explosive) material shall have on the interior of the body in which the Class 1 (explosive) materials are contained, any inwardly projecting bolts, screws, nails, or other inwardly projecting parts likely to produce damage to any package or container of Class 1 (explosive) materials during the loading or unloading process or in transit.

(f) Class 1 (explosive) materials vehicles, floors tight and lined. Motor vehicles transporting Division 1.1, 1.2, or 1.3 (explosive) materials shall have tight floors; shall have that portion of the interior in contact with the load lined with either non-metallic material or non-ferrous metals, except that the lining is not required for truck load shipments loaded by the Departments of the Army, Navy or Air Force of the United States Government provided the Class 1 (explosive) materials are of such nature that they are not liable to leakage of dust, powder, or vapor which might become the cause of an explosion. The interior of the cargo space must be in good condition so that there will not be any likelihood of containers being damaged by exposed bolts, nuts, broken side panels or floor boards, or any similar projections.

(g) No detonator assembly or booster with detonator may be transported on the same motor vehicle with any Division 1.1, 1.2 or 1.3 material (except other detonator assemblies, boosters with detonators or detonators), detonating cord Division 1.4 material or Division 1.5 material. No detonator may be transported on the same motor vehicle with any Division 1.1, 1.2 or 1.3 material (except other detonators, detonator assemblies or boosters with detonators), detonating cord Division 1.4 material or Division 1.5 material unless —

(1) It is packed in a specification MC 201 (§ 178.318 of this subchapter) container; or

(2) The package conforms with requirements prescribed in § 173.62 of this subchapter, and its use is restricted to instances when —

(i) There is no Division 1.1, 1.2, 1.3 or 1.5 material loaded on the motor vehicle; and

(ii) A separation of 61 cm (24 inches) is maintained between each package of detonators and each package of detonating cord; or

(3) It is packed and loaded in accordance with a method approved by the Associate Administrator. One approved method requires that—

(i) The detonators are in packagings as prescribed in § 173.63 of this subchapter which in turn are loaded into suitable containers or separate compartments; and

(ii) That both the detonators and the container or compartment meet the requirements of the IME Standard 22 (IBR, see § 171.7 of this subchapter).

(h) Lading within body or covered tailgate closed. Except as provided in paragraph (g) of this section, dealing with the transportation of liquid nitroglycerin, desensitized liquid nitroglycerin or diethylene glycol dinitrate, all of that portion of the lading of any motor vehicle which consists of Class 1 (explosive) materials shall be contained entirely within the body of the motor vehicle or within the horizontal outline thereof, without overhang or projection of any part of the load and if such motor vehicle has a tailboard or tailgate, it shall be closed and secured in place during such transportation. Every motor vehicle transporting Class 1 (explosive) materials must either have a closed body or have the body thereof covered with a tarpaulin, and in either event care must be taken to protect the load from moisture and sparks, except that subject to other provisions of these regulations, Class 1

(explosive) materials other than black powder may be transported on flat-bed vehicles if the explosive portion of the load on each vehicle is packed in fire and water resistant containers or covered with a fire and water resistant tarpaulin.

(i) Class 1 (explosive) materials to be protected against damage by other lading. No motor vehicle transporting any Class 1 (explosive) material may transport as a part of its load any metal or other articles or materials likely to damage such Class 1 (explosive) material or any package in which it is contained, unless the different parts of such load be so segregated or secured in place in or on the motor vehicle and separated by bulkheads or other suitable means as to prevent such damage.

(j) Transfer of Class 1 (explosive) materials en route. No Division 1.1, 1.2, or 1.3 (explosive) material shall be transferred from one container to another, or from one motor vehicle to another vehicle, or from another vehicle to a motor vehicle, on any public highway, street, or road, except in case of emergency. In such cases red electric lanterns, red emergency reflectors or red flags shall be set out in the manner prescribed for disabled or stopped motor vehicles. (See Motor Carrier Safety Regulations, part 392 of this title.) In any event, all practicable means, in addition to these hereinbefore prescribed, shall be taken to protect and warn other users of the highway against the hazard involved in any such transfer or against the hazard occasioned by the emergency making such transfer necessary.

(k) Attendance of Class 1 (explosive) materials. Division 1.1, 1.2, or 1.3 materials that are stored during transportation in commerce must be attended and afforded surveillance in accordance with 49 CFR 397.5. A safe haven that conforms to NFPA 498 (IBR, see § 171.7 of the subchapter) constitutes a federally approved safe haven for the unattended storage of vehicles containing Division 1.1, 1.2, or 1.3 materials.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[29 FR 18795, Dec. 29, 1964, redesignated at 32 FR 5606, Apr. 5, 1967; 51 FR 5975 (1986); 52 FR 13044; 54 FR 25015, 50382 (1989); 55 FR 21035, 37028, 52711 (1990); 61 FR 27166, 27175, May 30, 1996; 61 FR 51334, 51339, Oct. 1, 1996; 63 FR 52844, 52850, Oct. 1, 1998; 65 FR 58614, 58631, Sept. 29, 2000, as corrected at 65 FR 60382, 60383, Oct. 11, 2000; 66 FR 45376, 45385, Aug. 28, 2001; 68 FR 48562, 48570, Aug. 14, 2003; 68 FR 75734, 75748, Dec. 31, 2003; 71 FR 54388, 54397, Sept. 14, 2006; 76 FR 32867, 32873, June 7, 2011; 76 FR 56304, 56318, Sept. 13, 2011; 80 FR 79424, 79453, Dec. 21, 2015; 87 FR 79752, 79784, Dec. 27, 2022]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.837 Class 3 (flammable liquid) materials.

(See also § 177.834 (a) to (j).)

(a) Engine stopped. Unless the engine of a cargo tank motor vehicle is to be used for the operation of a pump, Class 3 material may not be loaded into, or on, or unloaded from any cargo tank motor vehicle while the engine is running. The diesel engine of a cargo tank motor vehicle may be left running during the loading and unloading of a Class 3 material if the ambient atmospheric temperature is at or below -12°C (10°F).

(b) Bonding and grounding containers other than cargo tanks prior to and during transfer of lading. For containers which are not in metallic contact with each other, either metallic bonds or ground conductors shall be provided for the neutralization of possible static charges prior to and during transfers of Class 3 (flammable liquid) materials between such containers. Such bonding shall be made by first connecting an electric conductor to the container to be filled and subsequently connecting the conductor to the container from which the liquid is to come, and not in any other order. To provide against ignition of vapors by discharge of static electricity, the latter connection shall be made at a point well removed from the opening from which the Class 3 (flammable liquid) material is to be discharged.

(c) Bonding and grounding cargo tanks before and during transfer of lading.

(1) When a cargo tank is loaded through an open filling hole, one end of a bond wire shall be connected to the stationary system piping or integrally connected steel framing, and the other end to the shell of the cargo tank to provide a continuous electrical connection. (If bonding is to the framing, it is essential that piping and framing be electrically interconnected.) This connection must be made before any filling hole is opened, and must remain in place until after the last filling hole has been closed. Additional bond wires are not needed around All-Metal flexible or swivel joints, but are required for nonmetallic flexible connections in the stationary system piping. When a cargo tank is unloaded by a suction-piping system through an open filling hole of the cargo tank, electrical continuity shall be maintained from cargo tank to receiving tank.

(2) When a cargo tank is loaded or unloaded through a vapor-tight (not open hole) top or bottom connection, so that there is no release of vapor at a point where a spark could occur, bonding or grounding, is not required. Contact of the closed connection must be made before flow starts and must not be broken until after the flow is completed.

(3) Bonding or grounding is not required when a cargo tank is unloaded through a nonvapor-tight connection into a stationary tank provided the metallic filling connection is maintained in contact with the filling hole.

(d) Unloading combustible liquids. For a cargo tank unloading a material meeting the definition for combustible liquid in § 173.150(f) of this subchapter, the qualified person attending the unloading operation must remain within 45.72 meters (150 feet) of the cargo tank and 7.62 meters (25 feet) of the

delivery hose and must observe both the cargo tank and the receiving container at least once every five minutes during unloading operations that take more than five minutes to complete.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[29 FR 18795, Dec. 29, 1964, redesignated at 32 FR 5606, Apr. 5, 1967; 51 FR 5975 (1986); 52 FR 13044 (1987); 55 FR 52711 (1990); 61 FR 18926, 18933, Apr. 29, 1996; 61 FR 27166, 27175, May 30, 1996; 65 FR 50450, 50462, Aug. 18, 2000; 68 FR 48562, 48570, Aug. 14, 2003; 87 FR 79752, 79784, Dec. 27, 2022]

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§ 177.838 Class 4 (flammable solid) materials, Class 5 (oxidizing) materials, and Division 4.2 (self-heating and pyrophoric liquid) materials.

(See also § 177.834 (a) to (j).)

(a) Lading within body or covered; tailgate closed; pick-up and delivery. All of that portion of the lading of any motor vehicle transporting Class 4 (flammable solid) or Class 5 (oxidizing) materials shall be contained entirely within the body of the motor vehicle and shall be covered by such body, by tarpaulins, or other suitable means, and if such motor vehicle has a tailboard or tailgate, it shall be closed and secured in place during such transportation: Provided, however, That the provisions of this paragraph need not apply to "pick-up and delivery" motor vehicles when such motor vehicles are used in no other transportation than in and about cities, towns, or villages. Shipment in water-tight bulk containers need not be covered by a tarpaulin or other means.

(b) Articles to be kept dry. Special care shall be taken in the loading of any motor vehicle with Class 4 (flammable solid) or Class 5 (oxidizing) materials which are likely to become hazardous to transport when wet, to keep them from being wetted during the loading process and to keep them dry during transit. Special care shall also be taken in the loading of any motor vehicle with Class 4 (flammable solid) or Class 5 (oxidizing) materials, which are likely to become more hazardous to transport by wetting, to keep them from being wetted during the loading process and to keep them dry during transit. Examples of such dangerous materials are charcoal screenings, ground, crushed, or pulverized charcoal, and lump charcoal.

(c) Lading ventilation, precautions against spontaneous combustion. Whenever a motor carrier has knowledge concerning the hazards of spontaneous combustion or heating of any article to be loaded on a motor vehicle, such article shall be so loaded as to afford sufficient ventilation of the load to provide reasonable assurance against fire from this cause; and in such a case the motor vehicle shall be unloaded as soon as practicable after reaching its destination. Charcoal screenings, or ground, crushed, granulated, or pulverized charcoal, in bags, shall be so loaded that the bags are laid horizontally in the motor vehicle, and so piled that there will be spaces for effective air circulation, which spaces shall not be less than 10 cm (3.9 inches) wide; and air spaces shall be maintained between rows of bags. Bags shall not be piled closer than 15 cm (5.9 inches) from the top of any motor vehicle with a closed body.

(d) [Reserved]

(e) [Reserved]

(f) Nitrates, except ammonium nitrate having organic coating, must be loaded in closed or open type motor vehicles, which must be swept clean and be free of any projections capable of injuring bags when so packaged. When shipped in open typemotor vehicles, the lading must be suitably covered.

Ammonium nitrate having organic coating must not be loaded in all-metal vehicles, other than those made of aluminum or aluminum alloys of the closed type.

(g) A motor vehicle may only contain 45.4 kg (100 pounds) or less net mass of material described as “Smokeless powder for small arms, Division 4.1" or “Black powder for small arms, Division 4.1.”

(h) Division 4.2 (pyrophoric liquid) materials in cylinders. Cylinders containing Division 4.2 (pyrophoric liquid) materials, unless packed in a strong box or case and secured therein to protect valves, must be loaded with all valves and safety relief devices in the vapor space. All cylinders must be secured so that no shifting occurs in transit.

(i) Division 4.2 (self-heating liquid) material. Notwithstanding the segregation requirements of § 177.848(d), the following Division 4.2 (self-heating) materials may be transported on the same transport vehicle with Class 8 (corrosive) materials. The hazardous materials must be palletized with a minimum height of 100 mm (4 inches) off the floor of the vehicle, and the self-heating material must be separated from the corrosive material by a minimum horizontal distance of 1.2 m (4 feet).

(1) Sodium hydrosulfite or sodium dithionite, UN1384, in PG II or III packaged in UN 1A2 steel drums that meet the Packing Group II performance requirements of subpart M of part 178 of this title.

(2) Thiourea dioxide, UN3341, in PG II or III packaged in UN 1G fiber drums meeting packing group II performance requirements of subpart M of part 178 of this subchapter.

(3) Self-heating, solid, organic, n.o.s., UN3088, in PG II or III packaged in UN 1G fiber drums meeting the Packing Group II performance level requirements of subpart M of part 178 of this subchapter.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[29 FR 18795, Dec. 29, 1964, redesignated at 32 FR 5606, Apr. 5, 1967; 52 FR 13044 (1987); 55 FR 52711 (1990); 56 FR 66284 (1991); Amdt. 177-80, 58 FR 51533, Oct. 1, 1993; Amdt. 177-83, 59 FR 49134, Sept. 26, 1994; Amdt. No. 177-86, 61 FR 18926, 18933, Apr. 29, 1996; Amdt. 177-87, 61 FR 27166, 27175, May 30, 1996; 80 FR 72914, 72929, Nov. 23, 2015; 81 FR 3636, 3684, Jan. 21, 2016]

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§ 177.839 Class 8 (corrosive) materials.

(See also § 177.834(a) through (j).)

(a) Nitric acid. No packaging of nitric acid of 50 percent or greater concentration may be loaded above any packaging containing any other kind of material.

(b) Storage batteries. All storage batteries containing any electrolyte must be so loaded, if loaded with other lading, that all such batteries will be protected against other lading falling onto or against them, and adequate means must be provided in all cases for the protection and insulation of battery terminals against short circuits.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[29 FR 18795, Dec. 29, 1964, redesignated at 32 FR 5606, Apr. 5, 1967; 51 FR 5975 (1986); 52 FR 13044 (1987); 55 FR 52712 (1990); Amdt. 177-83, 59 FR 49134, Sept. 26, 1994; Amdt. 177-87, 61 FR 27166, 27175, May 30, 1996]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.840 Class 2 (gases) materials.

(See also § 177.834 (a) to (j).)

(a) Floors or platforms essentially flat. Cylinders containing Class 2 (gases) materials shall not be loaded onto any part of the floor or platform of any motor vehicle which is not essentially flat; cylinders containing Class 2 (gases) materials may be loaded onto any motor vehicle not having a floor or platform only if such motor vehicle be equipped with suitable racks having adequate means for securing such cylinders in place therein. Nothing contained in this section shall be so construed as to prohibit the loading of such cylinders on any motor vehicle having a floor or platform and racks as hereinbefore described.

(1) Cylinders. Cylinders containing Class 2 gases must be securely restrained in an upright or horizontal position, loaded in racks, or packed in boxes or crates to prevent the cylinders from being shifted, overturned or ejected from the motor vehicle under normal transportation conditions. A pressure relief device, when installed, must be in communication with the vapor space of a cylinder containing a Division 2.1 (flammable gas) material.

(2) Cylinders for hydrogen, cryogenic liquid. A Specification DOT-4L cylinder containing hydrogen, cryogenic liquid may only be transported on a motor vehicle as follows:

(i) The vehicle must have an open body equipped with a suitable rack or support having a means to hold the cylinder upright when subjected to an acceleration of 2 "g" in any horizontal direction;

(ii) The combined total of the hydrogen venting rates, as marked, on the cylinders transported on one motor vehicle may not exceed 60 SCF per hour;

(iii) The vehicle may not enter a tunnel; and

(iv) Highway transportation is limited to private and contract carriage and to direct movement from point of origin to destination.

(3) Cylinders containing material classed as Division 2.3, Hazard Zone A

(i) Notwithstanding the segregation requirements of § 177.848(d), a cylinder containing a Division 2.3, Hazard Zone A materials may be transported on the same transport vehicle with materials classed as Division 2.1, Class 3, Class 4, Class 5, and Class 8 if all of the following requirements are met:

(A) The Division 2.3, Hazard Zone A material must be packaged as authorized by this subchapter. In addition, each package must be must be placed in a plastic bag which is taped closed and then overpacked in a UN 1A2 steel drum tested and marked for a PG II or higher performance level with insulation material inside to protect the cylinders from fire.

The outside of the overpack must be marked with an indication that the inner packagings conform to the prescribed specifications.

(B) A Division 2.1 material requiring strong non-bulk outer packagings in accordance with § 173.301(a)(9) of this subchapter must be overpacked in a UN 1A2 steel or 1H2 plastic drum tested and marked for a PG II or higher performance level. The outside of the overpack must be marked with an indication that the inner packagings conform to the prescribed specifications.

(C) Packages containing Division 2.3 Hazard Zone A material must be separated within the transport vehicle from packages containing Division 2.1, Class 3, Class 4, Class 5, and Class 8 materials by a minimum horizontal distance of 1.2 m (4 feet). In addition, all steel or plastic overpacks containing packages of Division 2.3, Hazard Zone A or Division 2.1 material must be placed on pallets within the transport vehicle.

(ii) Notwithstanding the segregation requirements of § 177.848(d), Division 2.3, Hazard Zone A material may be transported on the same transport vehicle with non-bulk packagings and IBCs meeting a UN performance standard containing only the residue of Division 2.1, 4.3, 5.1, and Class 3 and 8 materials if all of the following requirements are met:

(A) The materials are transported in enclosed trailers equipped with inlet and outlet vent openings with a minimum total area of one square foot per 1,000 cubic feet of trailer volume. Electrical systems within the trailer's interior must be non-sparking or explosion proof.

(B) Cylinders must be transported in an upright position and securely restrained within the trailer, or loaded into racks, secured to pallets, or packed in wooden or fiberboard boxes or crates to prevent the cylinders from shifting or overturning within the motor vehicle under normal transportation conditions. If cylinders are secured to a pallet, the pallet must be designed to transport 1,590 kg (3,500 lbs.) per pallet and the cylinders must be secured within the pallet by a web strap rated at 4,545 kg (10,000 lbs.).

(C) A cylinder containing Division 2.3 Hazard Zone A materials must be separated from non-bulk packagings and IBCs meeting a UN performance standard containing the residue of materials in Division 2.1, 4.3, or 5.1, or Class 3 or 8 by a minimum horizontal distance of 3 m (10 feet). The maximum gross weight of Division 2.3 Hazard Zone A material carried on one vehicle must not exceed 3,636 kg (8,000 lbs.).

(D) Motor carriers must have a satisfactory safety rating as prescribed in 49 CFR part 385.

(4) Cylinders for acetylene. Cylinders containing acetylene and manifolded as part of a mobile acetylene trailer system must be transported in accordance with § 173.301(g) of this subchapter.

(b) Portable tank containers containing Class 2 (gases) materials shall be loaded on motor vehicles only as follows:

(1) Onto a flat floor or platform of a motor vehicle.

(2) Onto a suitable frame of a motor vehicle.

(3) In either such case, such containers shall be safely and securely blocked or held down to prevent shifting relative to each other or to the supporting structure when in transit, particularly during sudden starts and stops and changes of direction of the vehicle.

(4) Requirements of paragraphs (1) and (2) of this paragraph (b) shall not be construed as prohibiting stacking of containers provided the provisions of paragraph (3) of this paragraph (b) are fully complied with.

§ 177.840 Class 2 (gases) materials.

(c) [Reserved]

(d) Engine to be stopped in cargo tank motor vehicles, except for transfer pump. No Division 2.1 (flammable gas) material shall be loaded into or on or unloaded from any cargo tank motor vehicle with the engine running unless the engine is used for the operation of the transfer pump of the vehicle. Unless the delivery hose is equipped with a shut-off valve at its discharge end, the engine of the motor vehicle shall be stopped at the finish of such loading or unloading operation while the filling or discharge connections are disconnected.

(e) Chlorine cargo tank motor vehicles shall be shipped only when equipped:

(1) With a gas mask of a type approved by The National Institute of Occupational Safety and Health (NIOSH) Pittsburgh Research Center, U.S. Department of Health and Human Services for chlorine service; and

(2) With an emergency kit for controlling leaks in fittings on the dome cover plate.

(f) A cargo tank motor vehicle used for transportation of chlorine may not be moved, coupled or uncoupled, when any loading or unloading connections are attached to the vehicle, nor may it be left without the power unit attached unless the vehicle is chocked or equivalent means are provided to prevent motion. For additional requirements, see § 173.315(o) of this subchapter.

(g) Each liquid discharge valve on a cargo tank motor vehicle, other than an engine fuel line valve, must be closed during transportation except during loading and unloading.

(h) The driver of a motor vehicle transporting a Division 2.1 (flammable gas) material that is a cryogenic liquid in a package exceeding 450 L (119 gallons) of water capacity shall avoid unnecessary delays during transportation. If unforeseen conditions cause an excessive pressure rise, the driver shall manually vent the tank at a remote and safe location. For each shipment, the driver shall make a written record of the cargo tank pressure and ambient (outside) temperature:

(1) At the start of each trip,

(2) Immediately before and after any manual venting,

(3) At least once every five hours, and

(4) At the destination point.

(i) No person may transport a Division 2.1 (flammable gas) material that is a cryogenic liquid in a cargo tank motor vehicle unless the pressure of the lading is equal to or less than that used to determine the marked rated holding time (MRHT) and the one-way travel time (OWTT), marked on the cargo tank in conformance with § 173.318(g) of this subchapter, is equal to or greater than the elapsed time between the start and termination of travel. This prohibition does not apply if, prior to expiration of the OWTT, the cargo tank is brought to full equilibration as specified in paragraph (j) of this section.

(j) Full equilibration of a cargo tank transporting a Division 2.1 (flammable gas) material that is a cryogenic liquid may only be done at a facility that loads or unloads a Division 2.1 (flammable gas) material that is a cryogenic liquid and must be performed and verified as follows:

(1) The temperature and pressure of the liquid must be reduced by a manually controlled release of vapor; and

(2) The pressure in the cargo tank must be measured at least ten minutes after the manual release is terminated.

(k) A carrier of carbon monoxide, cryogenic liquid must provide each driver with a self-contained air breathing apparatus that is approved by the National Institute of Occupational Safety and Health; for example, Mine Safety Appliance Co., Model 401, catalog number 461704.

(l) Operating procedure. Each operator of a cargo tank motor vehicle that is subject to the emergency discharge control requirements in § 173.315(n) of this subchapter must carry on or within the cargo

tank motor vehicle written emergency discharge control procedures for all delivery operations. The procedures must describe the cargo tank motor vehicle's emergency discharge control features and, for a passive shut-down capability, the parameters within which they are designed to function. The procedures must describe the process to be followed if a facility-provided hose is used for unloading when the cargo tank motor vehicle has a specially equipped delivery hose assembly to meet the requirements of § 173.315(n)(2) of this subchapter.

(m) Cargo tank motor vehicle safety check. Before unloading from a cargo tank motor vehicle containing a liquefied compressed gas, the qualified person performing the function must check those components of the discharge system, including delivery hose assemblies and piping, that are readily observed during the normal course of unloading to assure that they are of sound quality, without obvious defects detectable through visual observation and audio awareness, and that connections are secure. This check must be made after the pressure in the discharge system has reached at least equilibrium with the pressure in the cargo tank. Operators need not use instruments or take extraordinary actions to check components not readily visible. No operator may unload liquefied compressed gases from a cargo tank motor vehicle with a delivery hose assembly found to have any condition identified in § 180.416(g)(1) of this subchapter or with piping systems found to have any condition identified in § 180.416(g)(2) of this subchapter.

(n) Emergency shut down. If there is an unintentional release of product to the environment during unloading of a liquefied compressed gas, the qualified person unloading the cargo tank motor vehicle must promptly shut the internal self-closing stop valve or other primary means of closure and shut down all motive and auxiliary power equipment.

(o) Daily test of off-truck remote shut-off activation device. For a cargo tank motor vehicle equipped with an off-truck remote means to close the internal self-closing stop valve and shut off all motive and auxiliary power equipment, an operator must successfully test the activation device within 18 hours prior to the first delivery of each day. For a wireless transmitter/receiver, the person conducting the test must be at least 45.72 m (150 feet) from the cargo tank and may have the cargo tank in his line of sight.

(p) Unloading procedures for liquefied petroleum gas and anhydrous ammonia in metered delivery service. An operator must use the following procedures for unloading liquefied petroleum gas or anhydrous ammonia from a cargo tank motor vehicle in metered delivery service:

(1) For a cargo tank with a capacity of 13,247.5 L (3,500 water gallons) or less, excluding delivery hose and piping, the qualified person attending the unloading operation must remain within 45.72 meters (150 feet) of the cargo tank and 7.62 meters (25 feet) of the delivery hose and must observe both the cargo tank and the receiving container at least once every five minutes when the internal self-closing stop valve is open during unloading operations that take more than five minutes to complete.

(2) For a cargo tank with a capacity greater than 13,247.5 L (3,500 water gallons), excluding delivery hose and piping, the qualified person attending the unloading operation must remain within 45.72 m (150 feet) of the cargo tank and 7.62 m (25 feet) of the delivery hose when the internal self-closing stop valve is open.

(i) Except as provided in paragraph (p)(2)(ii) of this section, the qualified person attending the unloading operation must have an unobstructed view of the cargo tank and delivery hose to the maximum extent practicable, except during short periods when it is necessary to activate controls or monitor the receiving container.

(ii) For deliveries where the qualified person attending the unloading operation cannot maintain an unobstructed view of the cargo tank, when the internal self-closing stop valve is open, the qualified person must observe both the cargo tank and the receiving container at least once every five minutes during unloading operations that take more than five minutes to complete. In addition, by the compliance dates specified in §§ 173.315(n)(5) and 180.405(m)(3) of this

subchapter, the cargo tank motor vehicle must have an emergency discharge control capability that meets the requirements of § 173.315(n)(2) or § 173.315(n)(4) of this subchapter.

(q) Unloading procedures for liquefied petroleum gas and anhydrous ammonia in other than metered delivery service. An operator must use the following procedures for unloading liquefied petroleum gas or anhydrous ammonia from a cargo tank motor vehicle in other than metered delivery service:

(1) The qualified person attending the unloading operation must remain within 7.62 m (25 feet) of the cargo tank when the internal self-closing stop valve is open.

(2) The qualified person attending the unloading operation must have an unobstructed view of the cargo tank and delivery hose to the maximum extent practicable, except during short periods when it is necessary to activate controls or monitor the receiving container.

(r) Unloading using facility-provided hoses. A cargo tank motor vehicle equipped with a specially designed delivery hose assembly to meet the requirements of § 173.315(n)(2) of this subchapter may be unloaded using a delivery hose assembly provided by the receiving facility under the following conditions:

(1) The qualified person monitoring unloading must visually examine the facility hose assembly for obvious defects prior to its use in the unloading operation.

(2) The qualified person monitoring unloading must remain within arm’s reach of the mechanical means of closure for the internal self-closing stop valve when the internal self-closing stop valve is open except for short periods when it is necessary to activate controls or monitor the receiving container. For chlorine cargo tank motor vehicles, the qualified person must remain within arm’s reach of a means to stop the flow of product except for short periods when it is necessary to activate controls or monitor the receiving container.

(3) If the facility hose is equipped with a passive means to shut off the flow of product that conforms to and is maintained to the performance standard in § 173.315(n)(2) of this subchapter, the qualified person may attend the unloading operation in accordance with the attendance requirements prescribed for the material being unloaded in § 177.834 of this section.

(s) Off-truck remote shut-off activation device. For a cargo tank motor vehicle with an off-truck remote control shut-off capability as required by §§ 173.315(n)(3) or (n)(4) of this subchapter, the qualified person attending the unloading operation must be in possession of the activation device at all times during the unloading process. This requirement does not apply if the activation device is part of a system that will shut off the unloading operation without human intervention in the event of a leak or separation in the hose.

(t) Unloading without appropriate emergency discharge control equipment. Until a cargo tank motor vehicle is equipped with emergency discharge control equipment in conformance with §§ 173.315(n)(2) and 180.405(m)(1) of this subchapter, the qualified person attending the unloading operation must remain within arm’s reach of a means to close the internal self-closing stop valve when the internal self-closing stop valve is open except during short periods when the qualified person must activate controls or monitor the receiving container. For chlorine cargo tank motor vehicles unloaded after December 31, 1999, the qualified person must remain within arm’s reach of a means to stop the flow of product except for short periods when it is necessary to activate controls or monitor the receiving container.

(u) Unloading of chlorine cargo tank motor vehicles. Unloading of chlorine from a cargo tank motor vehicle must be performed in compliance with Section 3 of the Chlorine Institute Pamphlet 57, “Emergency Shut-off Systems for Bulk Transfer of Chlorine” (IBR, see § 171.7 of this subchapter).

(Approved by the Office of Management and Budget under control number 2137-0542)

Statutory Authority

§ 177.840 Class 2 (gases) materials.

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[29 FR 18795, Dec. 29, 1964, redesignated at 32 FR 5606, Apr. 5, 1967; 51 FR 5975 (1986); 52 FR 13044 (1987); 54 FR 25015, 50382 (1989); 55 FR 21035, 37028, 52712 (1990); 59 FR 49134, Sept. 26, 1994; 62 FR 51554, 51561, Oct. 1, 1997; 64 FR 28030, 28048, May 24, 1999; 64 FR 36802, 36806, July 8, 1999; 66 FR 45177, 45185, 45376, 45385, Aug. 28, 2001; 67 FR 51626, 51652, Aug. 8, 2002, as corrected at 67 FR 61287, 61289, Sept. 30, 2002; 67 FR 61006, 61015, Sept. 27, 2002; 68 FR 24653, 24662, May 8, 2003, as corrected at 68 FR 32679, 32680, June 2, 2003; 68 FR 61906, 61942, Oct. 30, 2003; 68 FR 75734, 75748, Dec. 31, 2003; 69 FR 30588, May 28, 2004; 69 FR 70902, Dec. 8, 2004; 76 FR 56304, 56318, Sept. 13, 2011; 81 FR 3636, 3684, Jan. 21, 2016; 81 FR 35484, 35544, June 2, 2016]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.841 Division 6.1 (poisonous) materials and Division 2.3 (poisonous gas) materials.

(See also § 177.834 (a) to (j).)

(a) Arsenical compounds in bulk. Care shall be exercised in the loading and unloading of "arsenical dust", "arsenic trioxide", and "sodium arsenate", allowable to be loaded into sift-proof, steel hopper-type or dump-type motor-vehicle bodies equipped with water-proof, dust-proof covers well secured in place on all openings, to accomplish such loading with the minimum spread of such compounds into the atmosphere by all means that are practicable; and no such loading or unloading shall be done near or adjacent to any place where there are or are likely to be, during the loading or unloading process assemblages of persons other than those engaged in the loading or unloading process, or upon any public highway or in any public place. Before any motor vehicle may be used for transporting any other articles, all detectable traces of arsenical materials must be removed therefrom by flushing with water, or by other appropriate method, and the marking removed.

(b) [Reserved]

(c) Division 2.3 (poisonous gas) or Division 6.1 (poisonous) materials. The transportation of a Division 2.3 (poisonous gas) or Division 6.1 (poisonous) material is not permitted if there is any interconnection between packagings.

(d) [Reserved]

(e) A motor carrier may not transport a package:

(1) Except as provided in paragraph (e)(3) of this section, bearing or required to bear a POISON or POISON INHALATION HAZARD label or placard in the same motor vehicle with material that is marked as or known to be foodstuffs, feed or edible material intended for consumption by humans or animals unless the poisonous material is packaged in accordance with this subchapter and is:

(i) Overpacked in a metal drum as specified in § 173.25(c) of this subchapter; or

(ii) Loaded into a closed unit load device and the foodstuffs, feed, or other edible material are loaded into another closed unit load device;

(2) Bearing or required to bear a POISON, POISON GAS or POISON INHALATION HAZARD label in the driver's compartment (including a sleeper berth) of a motor vehicle; or

(3) Bearing a POISON label displaying the text "PG III," or bearing a "PG III" mark adjacent to the POISON label, with materials marked as, or known to be, foodstuffs, feed or any other edible material intended for consumption by humans or animals, unless the package containing the Division 6.1, Packing Group III material is separated in a manner that, in the event of leakage from

packages under conditions normally incident to transportation, commingling of hazardous materials with foodstuffs, feed or any other edible material would not occur.

(f) Notwithstanding the segregation requirements of § 177.848(d), when transported by highway by private or contract motor carrier, Division 6.1 PG I, Hazard Zone A toxic-by-inhalation (TIH) materials meeting the definition of a hazardous waste as provided in § 171.8 of this subchapter, may be transported on the same transport vehicle with materials classed as Class 3, Class 4, Class 5, and Class 8. The Division 6.1 PG I, Hazard Zone A materials must be loaded on pallets and separated from the Class 3, Class 4, Class 5, and Class 8 materials by a minimum horizontal distance of 2.74 m (9 feet) when in conformance with the following:

(1) The TIH materials are packaged in combination packagings as prescribed in § 173.226(c) of this subchapter.

(2) The combination packages containing TIH materials must be:

(i) Filled and packed by the offeror's hazmat employees;

(ii) Be placed on pallets, when in a transport vehicle; and

(iii) Separated from hazardous materials classed as Class 3, Class 8 or Divisions 4.1, 4.2, 4.3, 5.1, or 5.2 by a nine-foot (minimum distance) buffer zone, when in a transport vehicle. The buffer zone maybe established by:

(A) A load lock;

(B) Empty drums;

(C) Drums containing hazardous materials (e.g., Class 9) that are compatible with materials in all other drums immediately around them; or

(D) Drums containing non-hazardous materials that are compatible with materials in all other drums immediately around them.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[29 FR 18795, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967; 51 FR 5975 (1986); 52 FR 13044 (1987); 55 FR 52712 (1990); 59 FR 49134, Sept. 26, 1994; 59 FR 67518, Dec. 29, 1994; 61 FR 27166, 27175, May 30, 1996; 62 FR 1217, 1236, Jan. 8, 1997; 62 FR 39398, July 22, 1997; 64 FR 10742, 10782, Mar. 5, 1999; 68 FR 48562, 48571, Aug. 14, 2003; 81 FR 3636, 3684, Jan. 21; 87 FR 79752, 79784, Dec. 27, 2022]

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§ 177.842 Class 7 (radioactive) material.

(a) The number of packages of Class 7 (radioactive) materials in any transport vehicle or in any single group in any storage location must be limited so that the total transport index number does not exceed 50. The total transport index of a group of packages and overpacks is determined by adding together the transport index number on the labels on the individual packages and overpacks in the group. This provision does not apply to exclusive use shipments described in §§ 173.441(b), 173.457, and 173.427 of this subchapter.

(b) Packages of Class 7 (radioactive) material bearing "RADIOACTIVE YELLOW-II" or "RADIOACTIVE YELLOW-III" labels may not be placed in a transport vehicle, storage location or in any other place closer than the distances shown in the following table to any area which may be continuously occupied by any passenger, employee, or animal, nor closer than the distances shown in the table to any package containing undeveloped film (if so marked), and must conform to the following conditions:

(1) If more than one of these packages is present, the distance must be computed from the following table on the basis of the total transport index number determined by adding together the transport index number on the labels on the individual packages and overpacks in the vehicle or storeroom.

(2) Where more than one group of packages is present in any single storage location, a single group may not have a total transport index greater than 50. Each group of packages must be handled and stored together no closer than 6 m (20 feet) (measured edge to edge) to any other group. The following table is to be used in accordance with the provisions of paragraph (b) of this section:

Minimum separation distance in meters (feet) to nearest undeveloped film in various times of transit

Total transport index	Up to 2 hours	2-4 hours	4-8 hours	8-12 hours	Over 12 hours	Minimum distance in meters (feet) to area of persons, or minimum

						distance in meters (feet) from dividing partition of cargo compartments
None	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
0.1 to 1.0	0.3 (1)	0.6 (2)	0.9 (3)	1.2 (4)	1.5 (5)	0.3 (1)
1.1 to 5.0	0.9 (3)	1.2 (4)	1.8 (6)	2.4 (8)	3.4 (11)	0.6 (2)
5.1 to 10.0	1.2 (4)	1.8 (6)	2.7 (9)	3.4 (11)	4.6 (15)	0.9 (3)
10.1 to 20.0	1.5 (5)	2.4 (8)	3.7 (12)	4.9 (16)	6.7 (22)	1.2 (4)
20.1 to 30.0	2.1 (7)	3.0 (10)	4.6 (15)	6.1 (20)	8.8 (29)	1.5 (5)
30.1 to 40.0	2.4 (8)	3.4 (11)	5.2 (17)	6.7 (22)	10.1 (33)	1.8 (6)
40.1 to 50.0	2.7 (9)	3.7 (12)	5.8 (19)	7.3 (24)	11.0 (36)	2.1 (7)

Note: The distance in this table must be measured from the nearest point on the nearest packages of Class 7 (radioactive) material.

(c) Shipments of low specific activity materials and surface contaminated objects, as defined in § 173.403 of this subchapter, must be loaded so as to avoid spillage and scattering of loose materials. Loading restrictions are set forth in § 173.427 of this subchapter.

(d) Packages must be so blocked and braced that they cannot change position during conditions normally incident to transportation.

(e) Persons should not remain unnecessarily in a vehicle containing Class 7 (radioactive) materials.

(f) The number of packages of fissile Class 7 (radioactive) material in any non-exclusive use transport vehicle must be limited so that the sum of the criticality safety indices (CSIs) does not exceed 50. In loading and storage areas, fissile material packages must be grouped so that the sum of CSIs in any one group is not greater than 50; there may be more than one group of fissile material packages in a loading or storage area, so long as each group is at least 6 m (20 feet) away from all other such groups. All pertinent requirements of §§ 173.457 and 173.459 apply.

(g) For shipments transported under exclusive use conditions the radiation dose rate may not exceed 0.02 mSv per hour (2 mrem per hour) in any position normally occupied in the motor vehicle. For shipments transported as exclusive use under the provisions of § 173.441(b) of this subchapter for packages with external radiation levels in excess of 2 mSv (200 mrem per hour) at the package surface, the motor vehicle must meet the requirements of a closed transport vehicle (see § 173.403 of this subchapter). The sum of criticality safety indices (CSIs) for packages containing fissile material may not exceed 100 in an exclusive use vehicle.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[33 FR 14933, Oct. 4, 1968; 33 FR 19823, Dec. 27, 1968; 55 FR 52712 (1990); 60 FR 50292, 50334, Sept. 28, 1995; 63 FR 52844, 52850, Oct. 1, 1998; 66 FR 45376, 45385, Aug. 28, 2001; 69 FR 3632, 3696, Jan. 26, 2004; 87 FR 79752, 79784, Dec. 27, 2022]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.843 Contamination of vehicles.

(a) Each motor vehicle used for transporting Class 7 (radioactive) materials under exclusive use conditions in accordance with § 173.427(b)(4), § 173.427(c), or § 173.443(b) of this subchapter must be surveyed with radiation detection instruments after each use. A vehicle may not be returned to Class 7 (radioactive) materials exclusive use transport service, and then only for a subsequent exclusive use shipment utilizing the provisions of any of the paragraphs § 173.427(b)(4), § 173.427(c), or § 173.443(b), until the radiation dose rate at every accessible surface is 0.005 mSv/h (0.5 mrem/h) or less and the non-fixed contamination is not greater than the level prescribed in § 173.443(a) of this subchapter.

(b) This section does not apply to any vehicle used solely for transporting Class 7 (radioactive) material if a survey of the interior surface shows that the radiation dose rate does not exceed 0.1 mSv per hour (10 mrem per hour) at the interior surface or 0.02 mSv per hour (2 mrem per hour) at 1 meter (3.3 feet) from any interior surface. These vehicles must be stenciled with the words "For Radioactive Materials Use Only" in lettering at least 7.6 centimeters (3 inches) high in a conspicuous place, on both sides of the exterior of the vehicle. These vehicles must be kept closed at all times other than loading and unloading.

(c) In case of fire, accident, breakage, or unusual delay involving shipments of Class 7 (radioactive) material, see §§ 171.15, 171.16 and 177.854 of this subchapter.

(d) Each transport vehicle used to transport Division 6.2 materials must be disinfected prior to reuse if a Division 6.2 material is released from its packaging during transportation. Disinfection may be by any means effective for neutralizing the material released.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[33 FR 14933, Oct. 4, 1968, as amended by 41 FR 16131, Apr. 15, 1976; 48 FR 10247, Mar. 10, 1983; 55 FR 52712, Dec. 21, 1990; 60 FR 50292, 50335, Sept. 28, 1995; 63 FR 52844, 52850, Oct. 1, 1998; 65 FR 58614, 58631, Sept. 29, 2000; 67 FR 53118, 53142, Aug. 14, 2002, as corrected at 67 FR 54967, Aug. 27, 2002; 75 FR 53593, 53597, Sept. 1, 2010; 79 FR 40590, 40618, July 11, 2014]

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§ 177.843 Contamination of vehicles.

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.848 Segregation of hazardous materials.

(a) This section applies to materials which meet one or more of the hazard classes defined in this subchapter and are:

(1) In packages that must be labeled or placarded in accordance with part 172 of this subchapter;

(2) In a compartment within a multi-compartmented cargo tank subject to the restrictions in § 173.33 of this subchapter; or

(3) In a portable tank loaded in a transport vehicle or freight container.

(b) When a transport vehicle is to be transported by vessel, other than a ferry vessel, hazardous materials on or within that vehicle must be stowed and segregated in accordance with § 176.83(b) of this subchapter.

(c) In addition to the provisions of paragraph (d) of this section and except as provided in § 173.12(e) of this subchapter, cyanides, cyanide mixtures or solutions may not be stored, loaded and transported with acids if a mixture of the materials would generate hydrogen cyanide; Division 4.2 materials may not be stored, loaded and transported with Class 8 liquids; and Division 6.1 Packing Group I, Hazard Zone A material may not be stored, loaded and transported with Class 3 material, Class 8 liquids, and Division 4.1, 4.2, 4.3, 5.1 or 5.2 materials.

(d) Except as otherwise provided in this subchapter, hazardous materials must be stored, loaded or transported in accordance with the following table and other provisions of this section:

[PUBLISHER'S NOTE: As printed in the GPO edition of the CFR, the following table is too wide to fit on an 80-character screen. Therefore, the table has been reformatted for the screen.]

§ 177.848 Segregation of hazardous materials.

SEGREGATION TABLE FOR HAZARDOUS MATERIALS

Class or division		Notes	1.1 1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3 gas Zone AExplosives	1.1	A	*$B*	*$B*	*	X	X	X
	and 1.2																	
Explosives	1.3		*$B*	*$B*	*	X		X										
Explosives	1.4		*$B*	*$B*	*	O		O										
Very insensitive explosives.	1.5	A	*$B*	*$B*	*	X	X	X										
Extremely insensitive explosives.	1.6		*$B*	*$B*	*													
Flammable gases	2.1		X	X	O	X				X								
Non-toxic, non-flammable gases	2.2		X			X												

Poisonous gas Zone A	2.3		X	X	O	X	X		
Poisonous gas Zone B	2.3		X	X	O	X	O		
Flammable liquids	3		X	X	O	X			X
Flammable solids	4.1		X			X			X
Spontaneously combustible materials	4.2		X	X	O	X			X
Dangerous when wet materials	4.3		X	X		X			X
Oxidizers	5.1	A	X	X		X			X
Organic peroxi	5.2		X	X		X			X

des								
Poisonous liquids PG I Zone A.	6.1	X	X	O	X	O		
Radioactive materials	7	X			X	O		
Corrosive liquids	8	X	X	O	X			X

§ 177.848 Segregation of hazardous materials.

SEGREGATION TABLE FOR HAZARDOUS MATERIALS

Class or division		**2.3 gas Zone B**	**4.1**	**4.2**	**4.3**	**5.1**	**5.2**	**6.1 liquids PG I Zone A**	**8 liquids only**
Explosives	1.1 and 1.2	X	X	X	X	X	X	X	X
Explosives	1.3	X		X	X	X	X	X	X
Explosives	1.4	O		C				O	O
Very insensitive explosives.	1.5	X	X	X	X	X	X	X	X
Extremely insensitive explosives.	1.6								
Flammable gases	2.1	O						O	

§ 177.848 Segregation of hazardous materials.

SEGREGATION TABLE FOR HAZARDOUS MATERIALS

Class or division		**2.3 gas Zone B**	**4.1**	**4.2**	**4.3**	**5.1**	**5.2**	**6.1 liquids PG I Zone A**	**8 liquids only**
Non-toxic, non-flammable gases	2.2								
Poisonous gas Zone A	2.3		X	X	X	X	X		X
Poisonous gas Zone B	2.3		C	C	C	C	C		O
Flammable liquids	3	O				C		X	
Flammable solids	4.1	O						X	O
Spontaneously combustible materials	4.2	O						X	X
Dangerous when wet materials	4.3	O						X	O

§ 177.848 Segregation of hazardous materials.

SEGREGATION TABLE FOR HAZARDOUS MATERIALS

Class or division		**2.3 gas Zone B**	**4.1**	**4.2**	**4.3**	**5.1**	**5.2**	**6.1 liquids PG I Zone A**	**8 liquids only**
Oxidizers	5.1	O						X	O
Organic peroxides	5.2	O						X	O
Poisonous liquids PG I Zone A.	6.1		X	X	X	X	X		X
Radioactive materials	7								
Corrosive liquids	8	O	O	X	O	O	O	X	

(e) Instructions for using the segregation table for hazardous materials are as follows:

(1) The absence of any hazard class or division or a blank space in the Table indicates that no restrictions apply.

(2) The letter “X” in the Table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation.

(3) The letter “O” in the Table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation unless separated in a manner that, in the event of leakage from packages under conditions normally incident to transportation, commingling of hazardous materials would not occur. Notwithstanding the methods of separation employed, Class 8 (corrosive) liquids may not be loaded above or adjacent to Class 4 (flammable) or Class 5 (oxidizing) materials; except that shippers may load truckload shipments of such materials together when it is known that the mixture of contents would not cause a fire or a dangerous evolution of heat or gas.

(4) The "*" in the Table indicates that segregation among different Class 1 (explosive) materials is governed by the compatibility table in paragraph (f) of this section.

(5) The note "A" in the second column of the table means that, notwithstanding the requirements of the letter "X", ammonium nitrate (UN1942) and ammonium nitrate fertilizer may be loaded or stored with Division 1.1 (explosive) or Division 1.5 materials, unless otherwise prohibited by § 177.835(c).

(6) When the § 172.101 table or § 172.402 of this subchapter requires a package to bear a subsidiary hazard label, segregation appropriate to the subsidiary hazard must be applied when that segregation is more restrictive than that required by the primary hazard. However, hazardous materials of the same class may be stored together without regard to segregation required for any secondary hazard if the materials are not capable of reacting dangerously with each other and causing combustion or dangerous evolution of heat, evolution of flammable, poisonous, or asphyxiant gases, or formation of corrosive or unstable materials.

(f) Class 1 (explosive) materials shall not be loaded, transported, or stored together, except as provided in this section, and in accordance with the following Table:

$

COMPATIBILITY TABLE FOR CLASS 1 (EXPLOSIVE) MATERIALS

Compatibility group	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**J**	**K**	**L**	**N**	**S**
A		X	X	X	X	X	X	X	X	X	X	X	X
B	X		X	X[(4)]	X	X	X	X	X	X	X	X	4/5
C	X	X		2	2	X	6	X	X	X	X	3	4/5
D	X	X[(4)]	2		2	X	6	X	X	X	X	3	4/5
E	X	X	2	2		X	6	X	X	X	X	3	4/5
F	X	X	X	X	X		X	X	X	X	X	X	4/5
G	X	X	6	6	6	X		X	X	X	X	X	4/5
H	X	X	X	X	X	X	X		X	X	X	X	4/5
J	X	X	X	X	X	X	X	X		X	X	X	4/5

$

COMPATIBILITY TABLE FOR CLASS 1 (EXPLOSIVE) MATERIALS

Compatibility group	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**J**	**K**	**L**	**N**	**S**
K	X	X	X	X	X	X	X	X	X		X	X	4/5
L	X	X	X	X	X	X	X	X	X	X	1	X	X
N	X	X	3	3	3	X	X	X	X	X	X		4/5
S	X	4/5	4/5	4/5	4/5	4/5	4/5	4/5	4/5	4/5	X	4/5	

(g) Instructions for using the compatibility table for Class 1 (explosive) materials are as follows:

(1) A blank space in the Table indicates that no restrictions apply.

(2) The letter “X” in the Table indicates that explosives of different compatibility groups may not be carried on the same transport vehicle.

(3) The numbers in the Table mean the following:

(i) “1” means an explosive from compatibility group L shall only be carried on the same transport vehicle with an identical explosive.

(ii) “2” means any combination of explosives from compatibility groups C, D, or E is assigned to compatibility group E.

(iii) “3” means any combination of explosives from compatibility groups C, D, or E with those in compatibility group N is assigned to compatibility group D.

(iv) “4” means “see § 177.835(g)” when transporting detonators.

(v) “5” means Division 1.4S fireworks may not be loaded on the same transport vehicle with Division 1.1 or 1.2 (explosive) materials.

(vi) “6” means explosive articles in compatibility group G, other than fireworks and those requiring special handling, may be loaded, transported and stored with other explosive articles of compatibility groups C, D and E, provided that explosive substances (such as those not contained in articles) are not carried in the same transport vehicle.

(h) Except as provided in paragraph (i) of this section, explosives of the same compatibility group but of different divisions may be transported together provided that the whole shipment is transported as though its entire contents were of the lower numerical division (i.e., Division 1.1 being lower than Division 1.2). For example, a mixed shipment of Division 1.2 (explosive) materials and Division 1.4 (explosive) materials, both of compatibility group D, must be transported as Division 1.2 (explosive) materials.

(i) When Division 1.5 materials, compatibility group D, are transported in the same freight container as Division 1.2 (explosive) materials, compatibility group D, the shipment must be transported as Division 1.1 (explosive) materials, compatibility group D.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[51 FR 5975 (1986); 52 FR 13044 (1987); 55 FR 52712, Dec. 21, 1990; 56 FR 66283, Dec. 20, 1991; 57 FR 45465, Oct. 1, 1992; 57 FR 47513, Oct. 16, 1992; 57 FR 59310, Dec. 15, 1992; Amdt. 177-82, 58 FR 50237, Sept. 24, 1993; 59 FR 49134, Sept. 26, 1994; Amdt. 177-87, 61 FR 27166, 27175, May 30, 1996; 63 FR 37454, 37462, July 10, 1998; 64 FR 10742, 10782, Mar. 5, 1999; 65 FR 50450, 50462, Aug. 18, 2000; 66 FR 33316, 33439, June 21, 2001; 66 FR 45177, 45185, 45376, 45385, Aug. 28, 2001; 70 FR 3302, 3310, Jan. 24, 2005; 70 FR 56084, 56099, Sept. 23, 2005; 73 FR 4699, 4719, Jan. 28, 2008; 75 FR 27205, 27216, May 14, 2010; 76 FR 43510, 43531, July 20, 2011; 76 FR 56304, 56318, Sept. 13, 2011; 81 FR 35484, 35544, June 2, 2016; 87 FR 79752, 79784, Dec. 27, 2022]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.854 Disabled vehicles and broken or leaking packages; repairs.

(a) Care of lading, hazardous materials. Whenever for any cause other than necessary traffic stops any motor vehicle transporting any hazardous material is stopped upon the traveled portion of any highway or shoulder thereof, special care shall be taken to guard the vehicle and its load or to take such steps as may be necessary to provide against hazard. Special effort shall be made to remove the motor vehicle to a place where the hazards of the materials being transported may be provided against. See § 392.22, 392.24, and 392.25 of this title for warning devices required to be displayed on the highway.

(b) Disposition of containers found broken or leaking in transit. When leaks occur in packages or containers during the course of transportation, subsequent to initial loading, disposition of such package or container shall be made by the safest practical means afforded under paragraphs (c), (d), and (e) of this section.

(c) Repairing or overpacking packages.

> **(1)** Packages may be repaired when safe and practicable, such repairing to be in accordance with the best and safest practice known and available.
>
> **(2)** Packages of hazardous materials that are damaged or found leaking during transportation, and hazardous materials that have spilled or leaked during transportation, may be forwarded to destination or returned to the shipper in a salvage packaging in accordance with the requirements of § 173.3, as applicable, of this subchapter.

(d) Transportation of repaired packages. Any package repaired in accordance with the requirements of paragraph (c)(1) of this section may be transported to the nearest place at which it may safely be disposed of only in compliance with the following requirements:

> **(1)** The package must be safe for transportation.
>
> **(2)** The repair of the package must be adequate to prevent contamination of or hazardous admixture with other lading transported on the same motor vehicle therewith.
>
> **(3)** If the carrier is not himself the shipper, the consignee's name and address must be plainly marked on the repaired package.

(e) Disposition of unsafe broken packages. In the event any leaking package or container cannot be safely and adequately repaired for transportation or transported, it shall be stored pending proper disposition in the safest and most expeditious manner possible.

(f) Stopped vehicles; other dangerous articles. Whenever any motor vehicle transporting Class 3 (flammable liquid), Class 4 (flammable solid), Class 5 (oxidizing), Class 8 (corrosive), Class 2 (gases), or Division 6.1 (poisonous) materials, is stopped for any cause other than necessary traffic stops upon the traveled portion of

any highway, or a shoulder next thereto, the following requirements shall be complied with during the period of such stop:

(1) For motor vehicles other than cargo tank motor vehicles used for the transportation of Class 3 (flammable liquid) or Division 2.1 (flammable gas) materials and not transporting Division 1.1, 1.2, or 1.3 (explosive) materials, warning devices must be set out in the manner prescribed in § 392.22 of this title.

(2) For cargo tanks used for the transportation of Class 3 (flammable liquid) or Division 2.1 (flammable gas) materials, whether loaded or empty, and vehicles transporting Division 1.1, 1.2, or 1.3 (explosive) materials, warning devices must be set out in the manner prescribed by § 392.25 of this title.

(g) Repair and maintenance of vehicles containing certain hazardous materials

(1) General. No person may use heat, flame or spark producing devices to repair or maintain the cargo or fuel containment system of a motor vehicle required to be placarded, other than COMBUSTIBLE, in accordance with subpart F of part 172 of this subchapter. As used in this section, “containment system” includes all vehicle components intended physically to contain cargo or fuel during loading or filling, transport, or unloading.

(2) Repair and maintenance inside a building. No person may perform repair or maintenance on a motor vehicle subject to paragraph (g)(1) of this section inside a building unless:

(i) The motor vehicle’s cargo and fuel containment systems are closed (except as necessary to maintain or repair the vehicle’s motor) and do not show any indication of leakage;

(ii) A means is provided, and a person capable to operate the motor vehicle is available, to immediately remove the motor vehicle if necessary in an emergency;

(iii) The motor vehicle is removed from the enclosed area upon completion of repair or maintenance work; and

(iv) For motor vehicles loaded with Division 1.1, 1.2, or 1.3 (explosive), Class 3 (flammable liquid), or Division 2.1 (flammable gas) materials, all sources of spark, flame or glowing heat within the area of enclosure (including any heating system drawing air therefrom) are extinguished, made inoperable or rendered explosion-proof by a suitable method. Exception: Electrical equipment on the vehicle, necessary to accomplish the maintenance function, may remain operational.

(h) No repair with flame unless gas-free. No repair of a cargo tank used for the transportation of any Class 3 (flammable liquid) or Division 6.1 (poisonous liquid) material, or any compartment thereof, or of any container for fuel of whatever nature, may be repaired by any method employing a flame, arc, or other means of welding, unless the tank or compartment shall first have been made gas-free.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[29 FR 18795, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967; 51 FR 5975 (1986); 55 FR 52714 (1990); 63 FR 52844, 52850, Oct. 1, 1998; 65 FR 58614, 58631, Sept. 29, 2000; 66 FR 45376, 45385, Aug. 28, 2001; 68 FR 57629, 57633, Oct. 6, 2003; 85 FR 83366, 83402, Dec. 21, 2020, as corrected at 86 FR 2564, Jan. 13, 2021]

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§ 177.854 Disabled vehicles and broken or leaking packages; repairs.

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 177.870 Regulations for passenger carrying vehicles.

(a) Vehicles transporting passengers and property. In addition to the regulations in parts 170-189 of this subchapter the following requirements shall apply to vehicles transporting passengers and property.

(b) No Class 1 (explosive) materials or other hazardous materials on passenger-carrying vehicles, exceptions. No hazardous materials except small-arms ammunition, emergency shipments of drugs, chemicals and hospital supplies, and the accompanying munitions of war of the Departments of the Army, Navy, and Air Force of the United States Government, are authorized by parts 170-189 of this subchapter to be transported on motor vehicles carrying passengers for hire where other practicable means of transportation is available.

(c) Class 1 (explosive) materials in passenger-carrying space forbidden. No Class 1 (explosive) material, except small-arms ammunition, may be carried in the passenger-carrying space of any motor vehicle transporting passengers for hire.

(d) Hazardous materials on passenger carrying vehicles; quantity. Where no other practicable means of transportation is available the following articles in the quantities as shown may be transported in motor vehicles carrying passengers for hire in a space other than that provided for passengers: Not to exceed 45 kg (99 pounds) gross weight of any or all of the kinds of Class 1 (explosive) materials permitted to be transported by passenger-carrying aircraft or rail car may be transported on a motor vehicle transporting passengers: Provided, however, That samples of Class 1 (explosive) materials for laboratory examination, not to exceed two samples, or a total of no more than 100 detonators, Division 1.4 (explosive) materials at one time in a single motor vehicle, may be transported in a motor vehicle transporting passengers.

(e) Articles other than Class 1 (explosive) materials on passenger-carrying vehicles. The gross weight of any given class of hazardous material other than Class 1 (explosive) materials shall not exceed 45 kg (99 pounds), and the aggregate weight of all such other dangerous articles shall not exceed 225 kg (496 pounds). This provision does not apply to nontoxic, nonflammable refrigerants, when such refrigerant is for servicing operations of a motor carrier on whose motor vehicles the refrigerant is used. A cylinder secured against shifting while in transit and not exceeding 113 kg (250 pounds) gross weight may be transported.

(f) Division 6.1 (poisonous) or Division 2.3 (poisonous gas) materials on passenger-carrying vehicles. No motor carrier may transport any extremely dangerous Division 6.1 (poisonous) or Division 2.3 (poisonous gas) material, or any paranitroaniline, in any amount, in or on any bus while engaged in the transportation of passengers; or any less dangerous Division 6.1 (poisonous) material, which is other than a liquid, in any amount exceeding an aggregate of 45 kg (99 pounds) gross weight in or on any such bus.

(g) Class 7 (radioactive) materials. In addition to the limitations prescribed in paragraphs (b) and (e) of this section, no person may transport any Class 7 (radioactive) material requiring labels under § 172.436, 172.438, and 172.440 of this subchapter in or on any motor vehicle carrying passengers for hire except where no other practicable means of transportation is available. Packages of Class 7 (radioactive) materials must be stored

only in the trunk or baggage compartment of the vehicle, and must not be stored in any compartment occupied by persons. Packages of Class 7 (radioactive) materials must be handled and placed in the vehicle as prescribed in § 177.842.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 177

History

[29 FR 18795, Dec. 29, 1964, Redesignated at 32 FR 5606, Apr. 5, 1967; 55 FR 39981, 52715 (1990); 56 FR 66283 (1991); 66 FR 45376, 45385, Aug. 28, 2001; 68 FR 61906, 61942, Oct. 30, 2003; 69 FR 30588, May 28, 2004; 69 FR 70902, Dec. 8, 2004]

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Part 178 — Specifications for Packagings

Statutory Authority

AUTHORITY NOTE APPLICABLE TO ENTIRE PART:

49 U.S.C. 5101-5128; 49 CFR 1.81 and 1.97.

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§ 178.2 Applicability and responsibility.

(a) Applicability. (1) The requirements of this part apply to packagings manufactured —

(i) To a DOT specification, regardless of country of manufacture; or

(ii) To a UN standard, for packagings manufactured within the United States. For UN standard packagings manufactured outside the United States, see § 173.24(d)(2) of this subchapter. For UN standard packagings for which standards are not prescribed in this part, see § 178.3(b).

(2) A manufacturer of a packaging subject to the requirements of this part is primarily responsible for compliance with the requirements of this part. However, any person who performs a function prescribed in this part shall perform that function in accordance with this part.

(b) Specification markings. When this part requires that a packaging be marked with a DOT specification or UN standard marking, marking of the packaging with the appropriate DOT or UN markings is the certification that —

(1) Except as otherwise provided in this section, all requirements of the DOT specification or UN standard, including performance tests, are met; and

(2) All functions performed by, or on behalf of, the person whose name or symbol appears as part of the marking conform to requirements specified in this part.

(c) Notification. (1) Except as specifically provided in §§ 178.337-18, 178.338-19, and 178.345-15 of this part, the manufacturer or other person certifying compliance with the requirements of this part, and each subsequent distributor of that packaging must:

(i) Notify each person to whom that packaging is transferred—

(A) Of all requirements in this part not met at the time of transfer, and

(B) With information specifying the type(s) and dimensions of the closures, including gaskets and any other components needed to ensure that the packaging is capable of successfully passing the applicable performance tests. This information must include any procedures to be followed, including closure instructions for inner packagings and receptacles, to effectively assemble and close the packaging for the purpose of preventing leakage in transportation. Closure instructions must provide for a consistent and repeatable means of closure that is sufficient to ensure the packaging is closed in the same manner as it was tested. For packagings sold or represented as being in conformance with the requirements of this subchapter applicable to transportation by aircraft, this information must include relevant guidance to ensure that the packaging, as prepared for transportation, will withstand the pressure differential requirements in § 173.27 of this subchapter.

(ii) Retain copies of each written notification for at least one year from date of issuance; and

(iii) Make copies of all written notifications available for inspection by a representative of the Department.

(2) The notification required in accordance with this paragraph (c) may be in writing or by electronic means, including e-mailed transmission or transmission on a CD or similar device. If a manufacturer or subsequent distributor of the packaging utilizes electronic means to make the required notifications, the notification must be specific to the packaging in question and must be in a form that can be printed in hard copy by the person receiving the notification.

(d) Except as provided in paragraph (c) of this section, a packaging not conforming to the applicable specifications or standards in this part may not be marked to indicate such conformance.

(e) Definitions. For the purpose of this part —

Manufacturer means the person whose name and address or symbol appears as part of the specification markings required by this part or, for a packaging marked with the symbol of an approval agency, the person on whose behalf the approval agency certifies the packaging.

Specification markings mean the packaging identification markings required by this part including, where applicable, the name and address or symbol of the packaging manufacturer or approval agency.

(f) No packaging may be manufactured or marked to a packaging specification that was in effect on September 30, 1991, and that was removed from this part 178 by a rule published in the Federal Register on December 21, 1990 and effective October 1, 1991.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 178

History

[55 FR 52715, Dec. 21, 1990; 56 FR 66284, Dec. 20, 1991; 59 FR 67519, Dec. 29, 1994; 62 FR 14334, 14338, March 26, 1997; 68 FR 44992, 45041, July 31, 2003; 69 FR 34604, 34612, June 22, 2004; 75 FR 5376, 5395, Feb. 2, 2010; 75 FR 60333, 60339, Sept. 30, 2010; 78 FR 1101, 1118, Jan. 7, 2013; 78 FR 15303, 15328, Mar. 11, 2013]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 178.3 Marking of packagings.

(a) Each packaging represented as manufactured to a DOT specification or a UN standard must be marked on a non-removable component of the packaging with specification markings conforming to the applicable specification, and with the following:

(1) In an unobstructed area, with letters, and numerals identifying the standards or specification (e.g. UN 1A1, DOT 4B240ET, etc.).

(2) Unless otherwise specified in this part, the name and address or symbol of the packaging manufacturer or the person certifying compliance with a UN standard. Symbols, if used, must be registered with the Associate Administrator. Unless authorized in writing by the holder of the symbol, symbols must represent either the packaging manufacturer or the approval agency responsible for providing the most recent certification for the packaging through design certification testing or periodic retesting, as applicable. Duplicative symbols are not authorized.

(3) The markings must be stamped, embossed, burned, printed or otherwise marked on the packaging to provide adequate accessibility, permanency, contrast, and legibility so as to be readily apparent and understood.

(4) Unless otherwise specified, letters and numerals must be at least 12.0 mm (0.47 inches) in height except for packagings of less than or equal to 30 L (7.9 gallons) capacity for liquids or 30 kg (66 pounds) maximum net mass for solids the height must be at least 6.0 mm (0.2 inches). For packagings having a capacity of 5 L (1.3 gallons) or less or of 5 kg (11 pounds) maximum net mass, letters and numerals must be of an appropriate size.

(5) For packages with a gross mass of more than 30 kg (66 pounds), the markings or a duplicate thereof must appear on the top or on a side of the packaging.

(b) A UN standard packaging for which the UN standard is set forth in this part may be marked with the United Nations symbol and other specification markings only if it fully conforms to the requirements of this part. A UN standard packaging for which the UN standard is not set forth in this part may be marked with the United Nations symbol and other specification markings for that standard as provided in the ICAO Technical Instructions or the IMDG Code subject to the following conditions:

(1) The U.S. manufacturer must establish that the packaging conforms to the applicable provisions of the ICAO Technical Instructions (IBR, see § 171.7 of this subchapter) or the IMDG Code (IBR, see § 171.7 of this subchapter), respectively.

(2) If an indication of the name of the manufacturer or other identification of the packaging as specified by the competent authority is required, the name and address or symbol of the manufacturer or the approval agency certifying compliance with the UN standard must be entered. Symbols, if used, must be registered with the Associate Administrator.

(3) The letters “USA” must be used to indicate the State authorizing the allocation of the specification marks if the packaging is manufactured in the United States.

(c) Where a packaging conforms to more than one UN standard or DOT specification, the packaging may bear more than one marking, provided the packaging meets all the requirements of each standard or specification. Where more than one marking appears on a packaging, each marking must appear in its entirety.

(d) No person may mark or otherwise certify a packaging or container as meeting the requirements of a manufacturing special permit unless that person is the holder of or a party to that special permit, an agent of the holder or party for the purpose of marking or certification, or a third party tester.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 178

History

[55 FR 52716, Dec. 21, 1990; 56 FR 66284, Dec. 20, 1991; 59 FR 67519, Dec. 29, 1994; 61 FR 21084, 21102, May 9, 1996; 65 FR 50450, 50462, Aug. 18, 2000; 66 FR 45376, 45386, Aug. 28, 2001; 67 FR 61006, 61015, Sept. 27, 2002; 68 FR 75734, 75748, Dec. 31, 2003; 70 FR 73156, 73166, Dec. 9, 2005; 78 FR 14702, 14714, Mar. 7, 2013; 87 FR 44944, 44999, July 26, 2022]

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49 CFR 178.1

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 178.1 Purpose and scope.

This part prescribes the manufacturing and testing specifications for packaging and containers used for the transportation of hazardous materials in commerce.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 178

History

[Amdt. 178-40, 42 FR 2689, Jan. 13, 1977. Redesignated by Amdt. 178-97, 55 FR 52715, Dec. 21, 1990]

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Part 178 — Specifications for Packagings

Statutory Authority

AUTHORITY NOTE APPLICABLE TO ENTIRE PART:

49 U.S.C. 5101-5128; 49 CFR 1.81 and 1.97.

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49 CFR 178.1

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§ 178.1 Purpose and scope.

This part prescribes the manufacturing and testing specifications for packaging and containers used for the transportation of hazardous materials in commerce.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 178

History

[Amdt. 178-40, 42 FR 2689, Jan. 13, 1977. Redesignated by Amdt. 178-97, 55 FR 52715, Dec. 21, 1990]

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§ 178.2 Applicability and responsibility.

(a) Applicability. (1) The requirements of this part apply to packagings manufactured —

(i) To a DOT specification, regardless of country of manufacture; or

(ii) To a UN standard, for packagings manufactured within the United States. For UN standard packagings manufactured outside the United States, see § 173.24(d)(2) of this subchapter. For UN standard packagings for which standards are not prescribed in this part, see § 178.3(b).

(2) A manufacturer of a packaging subject to the requirements of this part is primarily responsible for compliance with the requirements of this part. However, any person who performs a function prescribed in this part shall perform that function in accordance with this part.

(b) Specification markings. When this part requires that a packaging be marked with a DOT specification or UN standard marking, marking of the packaging with the appropriate DOT or UN markings is the certification that —

(1) Except as otherwise provided in this section, all requirements of the DOT specification or UN standard, including performance tests, are met; and

(2) All functions performed by, or on behalf of, the person whose name or symbol appears as part of the marking conform to requirements specified in this part.

(c) Notification. (1) Except as specifically provided in §§ 178.337-18, 178.338-19, and 178.345-15 of this part, the manufacturer or other person certifying compliance with the requirements of this part, and each subsequent distributor of that packaging must:

(i) Notify each person to whom that packaging is transferred—

(A) Of all requirements in this part not met at the time of transfer, and

(B) With information specifying the type(s) and dimensions of the closures, including gaskets and any other components needed to ensure that the packaging is capable of successfully passing the applicable performance tests. This information must include any procedures to be followed, including closure instructions for inner packagings and receptacles, to effectively assemble and close the packaging for the purpose of preventing leakage in transportation. Closure instructions must provide for a consistent and repeatable means of closure that is sufficient to ensure the packaging is closed in the same manner as it was tested. For packagings sold or represented as being in conformance with the requirements of this subchapter applicable to transportation by aircraft, this information must include relevant guidance to ensure that the packaging, as prepared for transportation, will withstand the pressure differential requirements in § 173.27 of this subchapter.

(ii) Retain copies of each written notification for at least one year from date of issuance; and

(iii) Make copies of all written notifications available for inspection by a representative of the Department.

(2) The notification required in accordance with this paragraph (c) may be in writing or by electronic means, including e-mailed transmission or transmission on a CD or similar device. If a manufacturer or subsequent distributor of the packaging utilizes electronic means to make the required notifications, the notification must be specific to the packaging in question and must be in a form that can be printed in hard copy by the person receiving the notification.

(d) Except as provided in paragraph (c) of this section, a packaging not conforming to the applicable specifications or standards in this part may not be marked to indicate such conformance.

(e) Definitions. For the purpose of this part —

Manufacturer means the person whose name and address or symbol appears as part of the specification markings required by this part or, for a packaging marked with the symbol of an approval agency, the person on whose behalf the approval agency certifies the packaging.

Specification markings mean the packaging identification markings required by this part including, where applicable, the name and address or symbol of the packaging manufacturer or approval agency.

(f) No packaging may be manufactured or marked to a packaging specification that was in effect on September 30, 1991, and that was removed from this part 178 by a rule published in the Federal Register on December 21, 1990 and effective October 1, 1991.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 178

History

[55 FR 52715, Dec. 21, 1990; 56 FR 66284, Dec. 20, 1991; 59 FR 67519, Dec. 29, 1994; 62 FR 14334, 14338, March 26, 1997; 68 FR 44992, 45041, July 31, 2003; 69 FR 34604, 34612, June 22, 2004; 75 FR 5376, 5395, Feb. 2, 2010; 75 FR 60333, 60339, Sept. 30, 2010; 78 FR 1101, 1118, Jan. 7, 2013; 78 FR 15303, 15328, Mar. 11, 2013]

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§ 178.3 Marking of packagings.

(a) Each packaging represented as manufactured to a DOT specification or a UN standard must be marked on a non-removable component of the packaging with specification markings conforming to the applicable specification, and with the following:

(1) In an unobstructed area, with letters, and numerals identifying the standards or specification (e.g. UN 1A1, DOT 4B240ET, etc.).

(2) Unless otherwise specified in this part, the name and address or symbol of the packaging manufacturer or the person certifying compliance with a UN standard. Symbols, if used, must be registered with the Associate Administrator. Unless authorized in writing by the holder of the symbol, symbols must represent either the packaging manufacturer or the approval agency responsible for providing the most recent certification for the packaging through design certification testing or periodic retesting, as applicable. Duplicative symbols are not authorized.

(3) The markings must be stamped, embossed, burned, printed or otherwise marked on the packaging to provide adequate accessibility, permanency, contrast, and legibility so as to be readily apparent and understood.

(4) Unless otherwise specified, letters and numerals must be at least 12.0 mm (0.47 inches) in height except for packagings of less than or equal to 30 L (7.9 gallons) capacity for liquids or 30 kg (66 pounds) maximum net mass for solids the height must be at least 6.0 mm (0.2 inches). For packagings having a capacity of 5 L (1.3 gallons) or less or of 5 kg (11 pounds) maximum net mass, letters and numerals must be of an appropriate size.

(5) For packages with a gross mass of more than 30 kg (66 pounds), the markings or a duplicate thereof must appear on the top or on a side of the packaging.

(b) A UN standard packaging for which the UN standard is set forth in this part may be marked with the United Nations symbol and other specification markings only if it fully conforms to the requirements of this part. A UN standard packaging for which the UN standard is not set forth in this part may be marked with the United Nations symbol and other specification markings for that standard as provided in the ICAO Technical Instructions or the IMDG Code subject to the following conditions:

(1) The U.S. manufacturer must establish that the packaging conforms to the applicable provisions of the ICAO Technical Instructions (IBR, see § 171.7 of this subchapter) or the IMDG Code (IBR, see § 171.7 of this subchapter), respectively.

(2) If an indication of the name of the manufacturer or other identification of the packaging as specified by the competent authority is required, the name and address or symbol of the manufacturer or the approval agency certifying compliance with the UN standard must be entered. Symbols, if used, must be registered with the Associate Administrator.

(3) The letters “USA” must be used to indicate the State authorizing the allocation of the specification marks if the packaging is manufactured in the United States.

(c) Where a packaging conforms to more than one UN standard or DOT specification, the packaging may bear more than one marking, provided the packaging meets all the requirements of each standard or specification. Where more than one marking appears on a packaging, each marking must appear in its entirety.

(d) No person may mark or otherwise certify a packaging or container as meeting the requirements of a manufacturing special permit unless that person is the holder of or a party to that special permit, an agent of the holder or party for the purpose of marking or certification, or a third party tester.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 178

History

[55 FR 52716, Dec. 21, 1990; 56 FR 66284, Dec. 20, 1991; 59 FR 67519, Dec. 29, 1994; 61 FR 21084, 21102, May 9, 1996; 65 FR 50450, 50462, Aug. 18, 2000; 66 FR 45376, 45386, Aug. 28, 2001; 67 FR 61006, 61015, Sept. 27, 2002; 68 FR 75734, 75748, Dec. 31, 2003; 70 FR 73156, 73166, Dec. 9, 2005; 78 FR 14702, 14714, Mar. 7, 2013; 87 FR 44944, 44999, July 26, 2022]

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This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

Part 180 — Continuing Qualification and Maintenance of Packagings

Statutory Authority

AUTHORITY NOTE APPLICABLE TO ENTIRE PART:

49 U.S.C. 5101-5128; 49 CFR 1.81 and 1.97.

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49 CFR 180.1

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

LEXISNEXIS' CODE OF FEDERAL REGULATIONS > Title 49 Transportation > Subtitle B — Other Regulations Relating to Transportation > Chapter I — Pipeline and Hazardous Materials Safety Administration, Department of Transportation > Subchapter C — Hazardous Materials Regulations > Part 180 — Continuing Qualification and Maintenance of Packagings > Subpart A — General

§ 180.1 Purpose and scope.

This part prescribes requirements pertaining to the maintenance, reconditioning, repair, inspection and testing of packagings, and any other function having an effect on the continuing qualification and use of a packaging under the requirements of this subchapter.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 180

History

Amdt. 180-2, 54 FR 25032, June 12, 1989.

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49 CFR 180.2

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 180.2 Applicability.

(a) Any person who performs a function prescribed in this part shall perform that function in accordance with this part.

(b) Any person who performs a function prescribed in this part is considered subject to the regulations of this subchapter when that person—

(1) Makes any representation indicating compliance with one or more of the requirements of this part; or

(2) Reintroduces into commerce a packaging that bears markings indicating compliance with this part.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 180

History

[Amdt. 180-2, 54 FR 25032, June 12, 1989, as amended by Amdt. 180-2, 56 FR 27877, June 17, 1991]

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49 CFR 180.3

This document is current through the Oct. 10, 2023 issue of the Federal Register, with the exception of the amendments appearing at 88 FR 69294, 88 FR 69873, and 88 FR 69883.

§ 180.3 General requirements.

(a) No person may represent, mark, certify, sell, or offer a packaging or container as meeting the requirements of this part, or a special permit pertaining to this part issued under subchapter A of this chapter, whether or not the packaging or container is intended to be used for the transportation of a hazardous material, unless it is marked, maintained, reconditioned, repaired, or retested, as appropriate, in accordance with this part, an approval issued thereunder, or a special permit issued under subchapter A of this chapter.

(b) The representations, markings, and certifications subject to the prohibitions of paragraph (a) of this section include:

(1) Identifications that include the letters "DOT", "MC", "ICC", or "UN";

(2) Special permit, approval, and registration numbers that include the letters "DOT";

(3) Test dates displayed in association with specification, registration, approval, or exemption markings indicating conformance to a test or retest requirement of this subchapter, an approval issued thereunder, or a special permit issued under subchapter A of this chapter;

(4) Documents indicating conformance to the testing, inspection, maintenance or other continuing qualification requirements of this part; and

(5) Sales literature, including advertising, indicating that the packaging or container represented therein conforms to requirements contained in subchapter A or C of this chapter.

Statutory Authority

Authority Note Applicable to 49 CFR Subtit. B, Ch. I, Subch. C, Pt. 180

History

[54 FR 25032, June 12, 1989, as amended by 58 FR 33306, June 16, 1993; 70 FR 73156, 73166, Dec. 9, 2005]

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