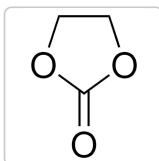


Type in Product Names, Product Numbers, or CAS Numbers to see suggestions.



[Back](#) [Battery Materials](#) > 809950



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Documents

[SDS](#)



[COO/COA](#)

[Specification Sheet](#)

[More Documents](#)

809950 ▶ **Sigma-Aldrich.**

[Share](#)

Ethylene carbonate

★★★★★ (0) [Write a review](#) [Ask a question](#)

battery grade, ≥99%, acid <10 ppm, H₂O <10 ppm

Synonym(s): EC, 1,3-Dioxolan-2-one

[Sign In](#) to View Organizational & Contract Pricing

Select a Size

Change View



25 G

\$281.00

500 G

\$1,070.00

809950-

25G ⓘ

\$281.00

Availability



In

[Details](#)



Stock

– 1 +

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About This Item

Empirical Formula (Hill Notation): C₃H₄O₃

CAS Number: [96-49-1](#)

Molecular Weight: 88.06

Beilstein/REAXYS Number: 106249

EC Number: [202-510-0](#)

MDL number: [MFCD00005382](#)

UNSPSC Code: 12352108

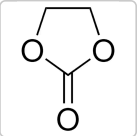
PubChem Substance ID: [329769201](#)

NACRES: NA.23



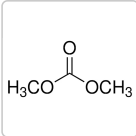
Ask a Scientist

RECOMMENDED PRODUCTS



Sigma-Aldrich
E26258
Ethylene carbonate

<



Sigma-Aldrich
517127
Dimethyl carbonate

>

View Price and Availability

View Price and Availability

PROPERTIES

Feedback

grade	battery grade
Quality Level	100
vapor density	3.04 (vs air)
vapor pressure	0.02 mmHg (36.4 °C)
assay	≥99%
form	solid
impurities	≤10 ppm H ₂ O ≤10 ppm acid
bp	243-244 °C/740 mmHg (lit.)
mp	35-38 °C (lit.) 36 °C (exp.)
density	1.321 g/mL at 25 °C (lit.)
application(s)	battery manufacturing
SMILES string	O=C1OCCO1

 Ask a Scientist

InChI 1S/C3H4O3/c4-3-5-1-2-6-3/h1-2H2

InChI key KMTRUDSVKNLOMY-UHFFFAOYSA-N

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Related Categories

[Battery Materials](#)

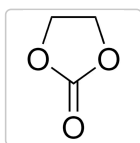
[Solvents](#)

COMPARE SIMILAR ITEMS

Show Differences ☐

Feedback

This Item



809950

Ethylene carbonate

[View Price and Availability](#)

grade

battery grade

form

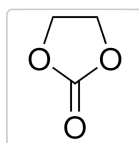
solid

application(s)

battery manufacturing

assay

≥99%



01380

Ethylene carbonate

[View Price and Availability](#)

grade

Standard for quantitative NMR, *TraceCERT*®

form

-

application(s)

cleaning products
cosmetics
flavors and fragrances
food and beverages
personal care
pharmaceutical

assay

-



Ask a Scientist

This Item	
impurities ≤10 ppm H ₂ O, ≤10 ppm acid	impurities -

DESCRIPTION

General description

Anhydrous ethylene carbonate is a cyclic ester and chemically related to ethylene glycol and dimethyl carbonate. It is a highly polar solvent and is a good solvent for many organic and inorganic compounds; however, at room temperature (25 °C) ethylene carbonate is a transparent crystalline solid, practically odorless and colorless, and somewhat soluble in water. In the liquid state (m.p. 35-37 °C) ethylene carbonate is a colorless, odorless liquid with a high boiling point (243 °C). Anhydrous ethylene carbonate is a solvent that is commonly used in the production of batteries, particularly lithium-ion batteries, and as a solvent in the pharmaceutical and chemical industries, in part because of its very high dielectric constant. Because of its high melting point and moderate viscosity, ethylene carbonate is often blended with other carbonates to yield a solution at room temperature with lower viscosity.

Application

Alkyl carbonates find applications as solvents for lithium ion battery electrolytes and the use of high quality battery grade electrolytes having extremely low water (< 10 ppm) and acid (< 10 ppm) contents are critical for achieving high electrochemical performance.

Caution

These additives have low water content (less than 100 ppm). Please handle under inert and moisture free environment (glove box). Keep containers tightly closed. Keep away from heat and ignition sources. Store in a cool and dry place. Avoid storing together with oxidizers.

Legal Information

Product of MU Ionic Solutions Corp

RELATED PRODUCTS

 [Ask a Scientist](#)

Related Product

450227

Lithium hexafluorophosphate, battery grade, $\geq 99.99\%$ trace metals basis

[View Pricing](#)

757136

Lithium bis(oxalato)borate

[View Pricing](#)

774138

Lithium difluoro(oxalato)borate

[View Pricing](#)

809942

Dimethyl carbonate, battery grade, $\geq 99.9\%$, acid < 10 ppm, H₂O < 10 ppm

[View Pricing](#)

809969

Propylene carbonate, battery grade, $\geq 99\%$, acid < 10 ppm, H₂O < 10 ppm

[View Pricing](#)

809977

Vinylene carbonate, battery grade, 99.5%, acid < 200 ppm, H₂O < 100 ppm

[View Pricing](#)

809934

Ethyl methyl carbonate, battery grade, 99.9%, acid < 10 ppm, H₂O < 10 ppm

[View Pricing](#)

900018

 [Ask a Scientist](#)

Diethyl carbonate, battery grade, ≥99%, acid < 10 ppm, H₂O < 10 ppm

[View Pricing](#)

901593

Ethylene carbonate solution, 1 M in THF

[View Pricing](#)

901612

Ethylene carbonate solution, 1 M in DMF

[View Pricing](#)

901686

Fluoroethylene carbonate, battery grade, ≥99%, acid < 200 ppm, anhydrous

[View Pricing](#)

Feedback

919977

Lithium bis(trifluoromethanesulfonyl)imide, anhydrous, 99.99% trace metals basis

[View Pricing](#)

SAFETY INFORMATION

pictograms



GHS08,GHS07

signalword

Warning

hcodes

H302,H319,H373

pcodes

**P260 - P264 - P280
- P301 + P312 -
P305 + P351 + P338
- P314**

Hazard

Classifications

Acute Tox. 4 Oral -
Eye Irrit. 2 - STOT RE
2 Oral

target_organ

Kidney

wgk_germany

WGK 1

flash_point_f

289.4 °F

[Ask a Scientist](#)

flash_point_c

143 °C

DOCUMENTATION



SDS



Specification Sheet

Certificate Of Analysis [Certificate Of Origin](#) [More Documents](#)

Certificates of Analysis (COA)

Search for Certificates of Analysis (COA) by entering the products Lot/Batch Number. Lot and Batch Numbers can be found on a product's label following the words 'Lot' or 'Batch'.

Lot/Batch Number

e.g. 023J5431

Search

Feedback

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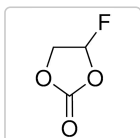
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Sigma-Aldrich
901686
Fluoroethylene
carbonate

[View Price and Availability](#)



Sigma-Aldrich
450227
Lithium
hexafluorophosphate

[View Price and Availability](#)

Feedback

PROTOCOLS AND ARTICLES

Articles

High-Energy Lithium-Ion Batteries

Experts discuss challenges and production processes of nickel-rich layered oxide cathode materials in energy storage systems.

Nanostructured Olivine-based Cathode Materials for Lithium-ion Batteries

Due to the adverse impact of the continued use of fossil fuels on the earth's environment and climate, researchers have been asked to develop new approaches for producing power using renewable sources like...

Ionic Liquids for Rechargeable Batteries

Ionic liquid electrolytes explored for rechargeable batteries' advancement; future IL development discussed.

Questions

Ask a Scientist

Be the first to ask a question

Reviews



Be the first to write a review

TECHNICAL SERVICE

Our team of scientists has experience in all areas of research including Life Science, Material Science, Chemical Synthesis, Chromatography, Analytical and many others.

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Feedback

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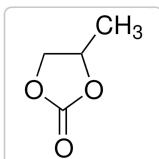
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[Back](#) [Battery Materials](#) > 809969



809969 ▶ **Sigma-Aldrich.**

[Share](#)

Propylene carbonate

★★★★★ (0) [Write a review](#) [Ask a question](#)

battery grade, ≥99%, acid <10 ppm, H₂O <10 ppm

Synonym(s): PC, 1,2-Propanediol cyclic carbonate, 4-Methyl-1,3-dioxolan-2-one

[All Photos](#) (2)

Documents

[SDS](#)



[COO/COA](#)

[Specification Sheet](#)

[More Documents](#)

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Select a Size

Change View



25 G

\$252.90

500 G

\$1,070.00

809969-

25G ⓘ

\$252.90

List

Price \$281.00 [Save 10%](#)

Availability



In

[Details](#)

Stock

– 1 +

[Add to Cart](#)

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About This Item

Empirical Formula (Hill Notation): C₄H₆O₃

CAS Number: [108-32-7](#)

Molecular Weight: 102.09

Beilstein/REAXYS Number: 107913

EC Number: [203-572-1](#)

MDL number: [MFCD00005385](#)

UNSPSC Code: 12352005

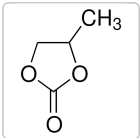
PubChem Substance ID: [329769202](#)

NACRES: NA.23

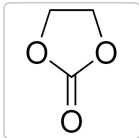


[Ask a Scientist](#)

RECOMMENDED PRODUCTS



Sigma-Aldrich
310328
Propylene carbonate



Sigma-Aldrich
809950
Ethylene carbonate

[View Price and Availability](#)[View Price and Availability](#)

PROPERTIES

Feedback

grade	battery grade
Quality Level	100
vapor pressure	0.13 mmHg (20 °C) 0.98 mmHg (50 °C)
assay	≥99%
form	liquid
autoignition temp.	851 °F
expl. lim.	14.3 %
impurities	≤10 ppm H ₂ O ≤10 ppm acid
refractive index	<i>n</i> _{20/D} 1.421 (lit.)
pH	7 (20 °C, 200 g/L)
bp	240 °C (lit.)
mp	-55 °C (lit.)

 [Ask a Scientist](#)

density	1.204 g/mL at 25 °C (lit.) 1.2 g/cm ³
application(s)	battery manufacturing
SMILES string	CC1COC(=O)O1
InChI	1S/C4H6O3/c1-3-2-6-4(5)7-3/h3H,2H2,1H3
InChI key	RUOJZAUFBMNUDX-UHFFFAOYSA-N

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Related Categories

[Battery Materials](#)

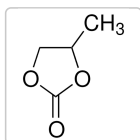
[Solvents](#)

Feedback

COMPARE SIMILAR ITEMS

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This Item



809969

Propylene carbonate

[View Price and Availability](#)

grade

battery grade

application(s)

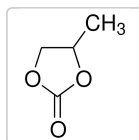
battery manufacturing

form

liquid

impurities

≤10 ppm H₂O, ≤10 ppm acid



P52652

Propylene carbonate

[View Price and Availability](#)

grade

-

application(s)

-

form

liquid

impurities

-

Ask a Scientist

This Item

assay

≥99%

assay

99%

DESCRIPTION

Application

Alkyl carbonates find applications as solvents for lithium ion battery electrolytes and the use of high quality battery grade electrolytes having extremely low water (<10 ppm) and acid (<10 ppm) contents are critical for achieving high electrochemical performance.

Preparation Note

These additives have low water content (less than 100 ppm). Please handle under inert and moisture free environment (glove box). Keep containers tightly closed. Keep away from heat and ignition sources. Store in a cool and dry place. Avoid storing together with oxidizers.

Feedback

Legal Information

Product of MU Ionic Solutions Corp

RELATED PRODUCTS

Related Product

450227

Lithium hexafluorophosphate, battery grade, ≥99.99% trace metals basis

[View Pricing](#)

757136

Lithium bis(oxalato)borate

[View Pricing](#)[Ask a Scientist](#)

Feedback	774138	Lithium difluoro(oxalato)borate	View Pricing
	809942	Dimethyl carbonate, battery grade, ≥99.9%, acid <10 ppm, H ₂ O <10 ppm	View Pricing
	809950	Ethylene carbonate, battery grade, ≥99%, acid <10 ppm, H ₂ O <10 ppm	View Pricing
	809977	Vinylene carbonate, battery grade, 99.5%, acid <200 ppm, H ₂ O <100 ppm	View Pricing
	809934	Ethyl methyl carbonate, battery grade, 99.9%, acid <10 ppm, H ₂ O <10ppm	View Pricing
	900018	Diethyl carbonate, battery grade, ≥99%, acid <10 ppm, H ₂ O <10 ppm	View Pricing
	901686	Fluoroethylene carbonate, battery grade, ≥99%, acid <200 ppm, anhydrous	View Pricing
	919977	Lithium bis(trifluoromethanesulfonyl)imide, anhydrous, 99.99% trace metals basis	Ask a Scientist

SAFETY INFORMATION

pictograms**GHS07****signalword**

Warning

hcodes**H319****pcodes****P264 - P280 - P305
+ P351 + P338 -
P337 + P313****Hazard
Classifications**

Eye Irrit. 2

wgk_germany

WGK 1

flash_point_f

275.0 °F

flash_point_c

135 °C

DOCUMENTATION

Feedback

**SDS****Specification Sheet****Certificate Of Analysis** **Certificate Of Origin** **More Documents**

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Lot/Batch Number

e.g. 023J5431

Search

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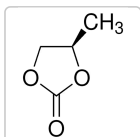
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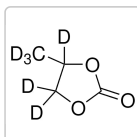
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Feedback



Sigma-Aldrich
540013
(R)-(+)-Propylene
carbonate

[View Price and Availability](#)



Sigma-Aldrich
703230
1,2-Propylene-d₆
carbonate

[View Price and Availability](#)



PEER REVIEWED PAPERS

Shi C, et al.
Electrochimica Acta, 174 (2015)

Gor YG, et al.
Journal of Power Sources, 294 (2015)

PROTOCOLS AND ARTICLES

Articles

 [Ask a Scientist](#)

High-Energy Lithium-Ion Batteries

Experts discuss challenges and production processes of nickel-rich layered oxide cathode materials in energy storage systems.

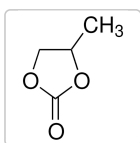
Nanostructured Olivine-based Cathode Materials for Lithium-ion Batteries

Due to the adverse impact of the continued use of fossil fuels on the earth's environment and climate, researchers have been asked to develop new approaches for producing power using renewable sources like...

Ionic Liquids for Rechargeable Batteries

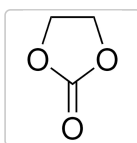
Ionic liquid electrolytes explored for rechargeable batteries' advancement; future IL development discussed.

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Sigma-Aldrich
P52652
Propylene carbonate

[View Price and Availability](#)



Sigma-Aldrich
809950
Ethylene carbonate

[View Price and Availability](#)

Feedback

Questions

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Reviews

★★★★★

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TECHNICAL SERVICE

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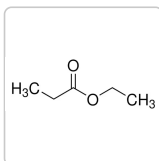
Feedback

 Ask a Scientist

Type in Product Names, Product Numbers, or CAS Numbers to see suggestions.



[Back](#) [Organic Building Blocks](#) > 112305



112305 ▶ **Sigma-Aldrich.**

[Share](#)

Ethyl propionate

★★★★★ 5.0 (1)

[Write a review](#) [Ask a question](#)

[All Photos](#) (3)

99%

Documents

Synonym(s): Ethyl propanoate, Propionic acid ethyl ester

[SDS](#)



[COO/COA](#)

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[Specification Sheet](#)

Select a Size

Change View



[More Documents](#)

25 ML

\$19.90

500 ML

\$51.60

1 L

\$83.50

112305-

25ML ⓘ

\$19.90

Availability



In

[Details](#)



Stock

– 1 +

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Feedback

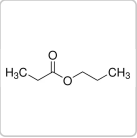
About This Item

Linear Formula:	CH ₃ CH ₂ COOC ₂ H ₅
CAS Number:	105-37-3
Molecular Weight:	102.13
Beilstein/REAXYS Number:	506287
EC Number:	203-291-4
MDL number:	MFCD00009308
UNSPSC Code:	12352100
eCl@ss:	39022258
PubChem Substance ID:	24847086



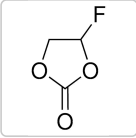
Ask a Scientist

RECOMMENDED PRODUCTS



Sigma-Aldrich
112267
Propyl propionate

<



Sigma-Aldrich
757349
Fluoroethylene carbonate

>

[View Price and Availability](#)

[View Price and Availability](#)

PROPERTIES

Feedback

vapor density	3.52 (vs air)
Quality Level	100
vapor pressure	40 mmHg (27.2 °C)
assay	99%
form	liquid
autoignition temp.	887 °F
expl. lim.	11 %
refractive index	$n_{20/D}$ 1.384 (lit.)
bp	99 °C (lit.)
mp	-73 °C (lit.)
density	0.888 g/mL at 25 °C (lit.)
SMILES string	CCOC(=O)CC

 Ask a Scientist

InChI 1S/C5H10O2/c1-3-5(6)7-4-2/h3-4H2,1-2H3

InChI key FKRCODPIKNEYAC-UHFFFAOYSA-N

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Related Categories

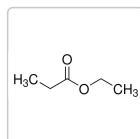
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COMPARE SIMILAR ITEMS

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Feedback

This Item



112305

Ethyl propionate

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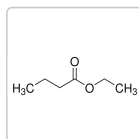
Quality Level
100

density
0.888 g/mL at 25 °C (lit.)

bp
99 °C (lit.)

refractive index
*n*_{20/D} 1.384 (lit.)

form
liquid



75563

Ethyl butyrate

[View Price and Availability](#)

Quality Level
200

density
0.875 g/mL at 25 °C (lit.)

bp
120 °C (lit.)

refractive index
*n*_{20/D} 1.392 (lit.), *n*_{20/D} 1.393

form
-

DESCRIPTION

General description

 [Ask a Scientist](#)

Ethyl propionate is a model for studying the fatty acid ethyl esters which are used as first-generation biodiesel^[1].

Application

Ethyl propionate was used to study the effect of its gavage administration on gastric toxicity in male F344 rats^[2].

Ethyl propionate, when used for contact dissolution of cholesterol gallstones, shows reduced side effects (attributable to increased blood levels) in piglets when compared to methyl tert-butyl ether^[3].

SAFETY INFORMATION

pictograms   GHS02,GHS07	signalword Danger	hcodes H225,H315,H319,H335	pcodes P210 - P233 - P240 - P241 - P303 + P361 + P353 - P305 + P351 + P338
Hazard Classifications Eye Irrit. 2 - Flam. Liq. 2 - Skin Irrit. 2 - STOT SE 3	target_organisms Respiratory system	wgk_germany WGK 1	flash_point_f 53.6 °F
flash_point_c 12 °C	ppe Eyeshields, Faceshields, Gloves, type ABEK (EN14387) respirator filter		

DOCUMENTATION

 [SDS](#)  [Specification Sheet](#)

 [Ask a Scientist](#)

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Lot/Batch Number

e.g. 023J5431

Search

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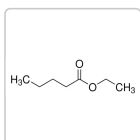
Feedback

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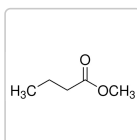
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CUSTOMERS ALSO VIEWED



Sigma-Aldrich
290866
Ethyl valerate



Sigma-Aldrich
W269301
Methyl butyrate



 [Ask a Scientist](#)

PEER REVIEWED PAPERS

Ethyl acrylate-induced gastric toxicity. II. Structure-toxicity relationships and mechanism.

B I Ghanayem et al.

Toxicology and applied pharmacology, 80(2), 336-344 (1985-09-15)

Earlier studies conducted in this laboratory demonstrated that gavage administration of ethyl acrylate caused pronounced gastric toxicity in rats given single or repeated doses. The current studies were undertaken to investigate the structural, metabolic, and physical basis of this chemically

Atmospheric chemistry of ethyl propionate.

Vibeke F Andersen et al.

The journal of physical chemistry. A, 116(21), 5164-5179 (2012-04-25)

Ethyl propionate is a model for fatty acid ethyl esters used as first-generation biodiesel. The atmospheric chemistry of ethyl propionate was investigated at 980 mbar total pressure. Relative rate measurements in 980 mbar N(2) at 293 ± 0.5 K were

Increased blood levels of methyl tert-butyl ether but not of ethyl propionate during instillation with contact gallstone dissolution agents in the pig.

O Esch et al.

Hepatology (Baltimore, Md.), 18(2), 373-379 (1993-08-01)

We performed experiments in anesthetized piglets with two cholesterol gallstone solvents, methyl tert-butyl ether and ethyl propionate, to determine whether blood levels of either solvent would increase during gallbladder instillation of these solvents under conditions simulating gallstone dissolution. The solvent

Toxic effects of cholelitholytic solvents on gallbladder and liver. A piglet model study.

C Y Chen et al.

Digestive diseases and sciences, 40(2), 419-426 (1995-02-01)

We evaluated the toxic effects of four currently used chemolytic solvents--dimethyl sulfoxide (DMSO, 99%), ethyl propionate (EP, 99%), tetrasodium ethyl-dimethyl tetraacetate (4Na-EDTA, 2%, pH 11), and methyl tert-butyl ether (MTBE, purity = 99.5%) in an animal model. Each solvent was

Acute effects of topical methyl tert-butyl ether or ethyl propionate on gallbladder histology in animals: a comparison of two solvents for contact dissolution of cholesterol gallstones.

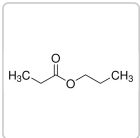
O Esch et al.

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Experiments were performed in anesthetized rabbits and piglets to assess gallbladder mucosal injury during irrigation with methyl tert-butyl ether, a C5 ether, or ethyl propionate, a C5 ester--two organic solvents used in the contact dissolution of cholesterol gallstones. In 44

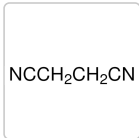
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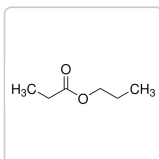
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112267 ▶ **Sigma-Aldrich.**

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Propyl propionate

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99%

Synonym(s): Propyl propanoate

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Select a Size

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100 ML

\$83.70

1 L

\$182.00

112267-

100ML ⓘ

\$83.70

Availability

✓ Estimated December to ship on 12, 2024

– 1 +

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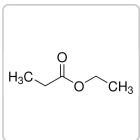
About This Item

Linear Formula:	CH ₃ CH ₂ COOCH ₂ CH ₂ CH ₃
CAS Number:	106-36-5
Molecular Weight:	116.16
Beilstein/REAXYS Number:	1699993
EC Number:	203-389-7
MDL number:	MFCD00009373
UNSPSC Code:	12352100
eCl@ss:	39022259
PubChem Substance ID:	24847079
NACRES:	NA.22



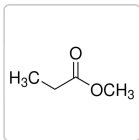
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Sigma-Aldrich
112305
Ethyl propionate

<



Sigma-Aldrich
109258
Methyl propionate

>

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PROPERTIES

Feedback

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vapor density	4 (vs air)
Quality Level	100
assay	99%
refractive index	<i>n</i> ₂₀ /D 1.393 (lit.)
bp	122-124 °C (lit.)
mp	-76 °C (lit.)
density	0.881 g/mL at 25 °C (lit.)
SMILES string	CCCOC(=O)CC
InChI	1S/C6H12O2/c1-3-5-8-6(7)4-2/h3-5H2,1-2H3
InChI key	MCSINKKTEDDPNK-UHFFFAOYSA-N

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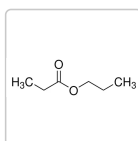
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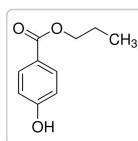
This Item



112267
Propyl propionate

[View Price and Availability](#)

Quality Level
100



P53357
Propyl 4-hydroxybenzoate

[View Price and Availability](#)

Quality Level
200

[Ask a Scientist](#)

This Item density 0.881 g/mL at 25 °C (lit.)	density -
refractive index <i>n</i> _{20/D} 1.393 (lit.)	refractive index -
mp -76 °C (lit.)	mp 95-98 °C (lit.)
bp 122-124 °C (lit.)	bp -

DESCRIPTION

General description

Propyl propionate and water mixtures can be separated by pervaporation using PEBA membranes. The diffusivity of pure propyl propionate in the PEBA membrane is about 28 times higher than pure water diffusivity^[1].

Application

Propyl propionate is a general reagent which can be used in various transesterification reactions.^{[2][3]}

SAFETY INFORMATION

pictograms



GHS02,GHS07

signalword

Warning

hcodes

H226,H332

pcodes

**P210 - P233 - P240
- P241 - P242 -
P304 + P340 + P312**

Hazard

Classifications

Acute Tox. 4

Inhalation - Flam.

Liq. 3

wgk_germany

WGK 1

flash_point_f

75.2 °F

flash_point_c

24 °C

Ask a Scientist

ppe

Eyeshields,
Faceshields, Gloves,
type ABEK
(EN14387)
respirator filter

DOCUMENTATION



SDS



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Lot/Batch Number

e.g. 023J5431

Search

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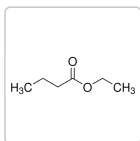
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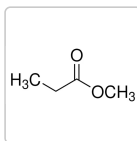
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109258
Methyl propionate

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Feedback

Permselectivity, solubility and diffusivity of propyl propionate/water mixtures in poly (ether block amide) membranes.

Mujiburohman M and Feng X.

Journal of Membrane Science, 300(1), 95-103 (2007)

Propyl Propionate Methanolysis Kinetics: Experiment and Modeling.

Povarov V G and Keresten A A

The Journal of Physical Chemistry, 117(38), 9115-9119 (2013)

Lipase-catalyzed synthesis of aliphatic poly (carbonate-co-esters).

Jiang Z, et al.

Macromolecules, 41(13), 4671-4680 (2008)

Evaluation of the non-aldehyde volatile compounds formed during deep-fat frying process.

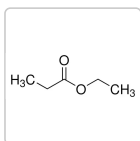
Qing Zhang et al.

Food chemistry, 243, 151-161 (2017-11-18)

 [Ask a Scientist](#)

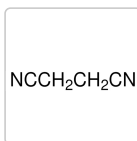
To investigate the non-aldehyde volatile profile resulting from deep-fat frying, volatile compounds formed during the processes of heating soybean oil (SO), frying wheat dough (WD), and frying chicken breast meat (CBM) were comparatively studied. By using gas chromatography-mass spectrometry and

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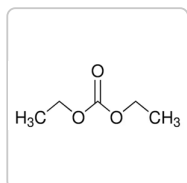
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D91551

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Feedback

[COA](#)[Specification Sheet](#)[View All Documentation](#)**D91551** ▶ **Sigma-Aldrich.**[Share](#)**Diethyl carbonate** ★★★★★ (0) [Write a review](#) [Ask a question](#)

99%

Synonym(s): DEC[Sign In](#) to View Organizational & Contract Pricing**Select a Size**

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**250 ML**

\$43.90

1 L

\$167.00

4 L

\$361.00

18 L

\$1,220.00

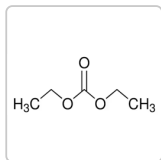
**D91551-
250ML** **\$43.90** In Stock [Details](#)

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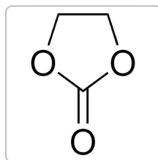
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Linear Formula:	(C ₂ H ₅ O) ₂ CO
CAS Number:	105-58-8
Molecular Weight:	118.13
Beilstein/REAXYS Number:	956591
EC Number:	203-311-1
MDL number:	MFCD00009107
UNSPSC Code:	12352108
PubChem Substance ID:	24894264
NACRES:	NA.22

RECOMMENDED PRODUCTS



Sigma-Aldrich
517135
Diethyl carbonate



Sigma-Aldrich
E26258
Ethylene carbonate

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[Quick View](#)

PROPERTIES

vapor density 4.1 (vs air)

Quality Level **100**

vapor pressure 10 mmHg (23.8 °C)
59 mmHg (37.8 °C)

assay 99%

form liquid

greener alternative product characteristics
Less Hazardous Chemical Syntheses
Safer Solvents and Auxiliaries
Design for Degradation
Learn more about the [Principles of Green Chemistry](#).

sustainability Greener Alternative Product

refractive index $n_{20/D}$ 1.384 (lit.)

bp 126-128 °C (lit.)

mp -43 °C (lit.)

density 0.975 g/mL at 25 °C (lit.)

greener alternative category **Aligned**,

SMILES string O=C(OCC)OCC

Feedback

InChI

1S/C5H10O3/c1-3-7-5(6)8-4-2/h3-4H2,1-2H3

InChI key

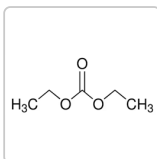
OIFBSDVPJOWBCH-UHFFFAOYSA-N

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COMPARE SIMILAR ITEMS

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This Item

**D91551****Diethyl carbonate**[Quick View](#)

Quality Level

100

density

0.975 g/mL at 25 °C (lit.)

bp

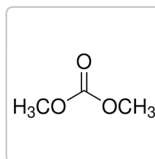
126-128 °C (lit.)

form

liquid

mp

-43 °C (lit.)

**D152927****Dimethyl carbonate**[Quick View](#)

Quality Level

200

density

1.069 g/mL at 25 °C (lit.)

bp

90 °C (lit.)

form

liquid

mp

2-4 °C (lit.)

Feedback

>

DESCRIPTION

General description

We are committed to bringing you Greener Alternative Products, which adhere to one or more of The 12 Principles of Greener Chemistry. This product is used as a greener reagent. [Click here](#) for more information.

Application

Diethyl carbonate (DEC) is generally used in the C-alkoxycarbonylation of enolate anions, aryl and alkyl cyanides.^[1] It reacts with 1,2-amino alcohols to yield corresponding 2-oxazolidinones.^[2] Additionally, DEC is also used as a component of electrolyte solution in lithium ion batteries.^{[3][4]}

SAFETY INFORMATION

pictograms



GHS02

signalword

Warning

hcodes

H226

pcodes

P210 - P233 - P240 -
P241 - P242 - P243

Hazard

Classifications

Flam. Liq. 3

Storage Class

3 - Flammable liquids

wgk_germany

WGK 1

flash_point_f

77.0 °F - closed cup

flash_point_c

25 °C - closed cup

ppe

Eyeshields,
Faceshields, Gloves,
type ABEK
(EN14387) respirator
filter

Feedback

DOCUMENTATION



SDS



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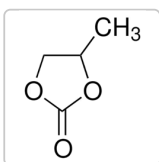
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Propylene carbonate

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Lithium
hexafluorophosphate

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Gage JR and Evans DA
Organic Syntheses, 68, 83-83 (2003)

The study of the anodic stability of alkyl carbonate solutions by in situ FTIR spectroscopy, EQCM, NMR and MS.

Moshkovich M, et al.

Thermal stability of alkyl carbonate mixed-solvent electrolytes for lithium ion cells.

Kawamura T, et al.

Journal of Power Sources, 104(2), 260-264 (2002)

Diethyl Carbonate.

Krapcho AP and Gorin DJ

Encyclopedia of Reagents for Organic Synthesis, Second Edition, 1-10 (2001)

Enzymatic synthesis and chemical recycling of poly(carbonate-urethane).

Yasuyuki Soeda et al.

Macromolecular bioscience, 4(8), 721-728 (2004-10-07)

Novel enzymatically recyclable poly(carbonate-urethane) consisting of a diurethane moiety as a hard segment and a carbonate linkage as an enzymatically cleavable unit was prepared by the polycondensation of biodegradable diurethanediol and diethyl carbonate using lipase. The produced poly(carbonate-urethane) was readily

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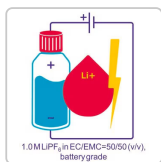
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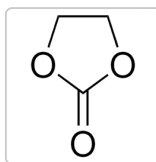
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Solid-state lithium fast-ion conductors are crucial for safer, high-energy-density all-solid-state batteries, addressing conventional battery limitations.

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Lithium hexafluorophosphate...



Sigma-Aldrich
809950
Ethylene carbonate

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2

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Anonymous · 3 months ago

How is shipping temperature determined? And how is it related to the product storage temperature?

1

answer

Technical Support · 3 months ago

Products may be shipped at a different temperature than the recommended long-term storage temperature. If the product quality is sensitive to short-term exposure to conditions other than the recommended long-term storage, it will be shipped on wet or dry-ice. If the product quality is NOT affected by short-term exposure to conditions other than the recommended long-term storage, it will be shipped at ambient temperature. As shipping routes are configured for minimum transit times, shipping at ambient temperature helps control shipping costs for our customers. For more information, please refer to the Storage and Transport Conditions document:

<https://www.sigmaaldrich.com/deepweb/assets/sigmaaldrich/marketing/global/documents/316/622/storage-transport-conditions-mk.pdf>

Helpful? **Yes · 0** **No · 0** [Report](#)

Anonymous · 3 months ago

1
answer

How can I determine the shelf life / expiration / retest date of this product?

Technical Support · 3 months ago

If this product has an expiration or retest date, it will be shown on the Certificate of Analysis (COA, CofA). If there is no retest or expiration date listed on the product's COA, we do not have suitable stability data to determine a shelf life. For these products, the only date on the COA will be the release date; a retest, expiration, or use-by-date will not be displayed.

For all products, we recommend handling per defined conditions as printed in our product literature and website product descriptions. We recommend that products should be routinely inspected by customers to ensure they perform as expected.

For products without retest or expiration dates, our standard warranty of 1 year from the date of shipment is applicable.

For more information, please refer to the Product Dating Information document:

<https://www.sigmaaldrich.com/deepweb/assets/sigmaaldrich/marketing/global/documents/449/386/product-dating-information-mk.pdf>

Feedback

Helpful? **Yes · 0** **No · 0** [Report](#)

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★★★★★

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TECHNICAL SERVICE

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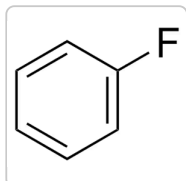
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Feedback

F6001 [Sigma-Aldrich](#)[Share](#)

Fluorobenzene

★★★★★ (0) [Write a review](#) [Ask a question](#)

99%

Synonym(s): Monofluorobenzene, Phenyl fluoride[Sign In](#) to View Organizational & Contract Pricing

Select a Size

Change View

**5 G**

\$37.50

100 G

\$51.40

500 G

\$167.00

F6001-5G-A

**\$37.50**

In Stock

[Details](#)

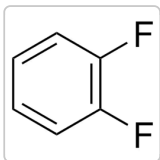
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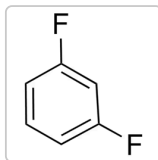
About This Item

Empirical Formula (Hill Notation):	C ₆ H ₅ F
CAS Number:	462-06-6
Molecular Weight:	96.10
Beilstein/REAXYS Number:	1236623
EC Number:	207-321-7
MDL number:	MFCD00000280
UNSPSC Code:	12352100
PubChem Substance ID:	24894898
NACRES:	NA.22

RECOMMENDED PRODUCTS



Sigma-Aldrich
126152
1,2-Difluorobenzene



Sigma-Aldrich
D102008
1,3-Difluorobenzene

[Quick View](#)

[Quick View](#)

PROPERTIES

vapor density 3.31 (vs air)

Quality Level **200**

assay 99%

refractive index $n_{20/D}$ 1.465 (lit.)

bp 85 °C (lit.)

mp -42 °C (lit.)

density 1.024 g/mL at 25 °C (lit.)

SMILES string Fc1ccccc1

InChI 1S/C6H5F/c7-6-4-2-1-3-5-6/h1-5H

InChI key PYLWMHQQBFSUBP-UHFFFAOYSA-N

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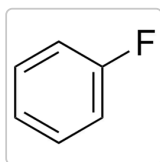
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F6001
Fluorobenzene

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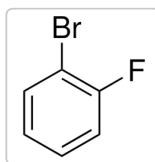
Quality Level
200

mp
-42 °C (lit.)

density
1.024 g/mL at 25 °C (lit.)

refractive index
 $n_{20/D}$ 1.465 (lit.)

bp
85 °C (lit.)



B66809
1-Bromo-2-fluorobenzene

[Quick View](#)

Quality Level
200

mp
-

density
1.601 g/mL at 25 °C (lit.)

refractive index
 $n_{20/D}$ 1.534 (lit.)

bp
-

Feedback

DESCRIPTION

Application

Fluorobenzene is generally used as a solvent in synthetic chemistry.^{[1][2]} It can also be used as an aryl fluoride precursor in the nickel-catalyzed cross-coupling reactions.^{[3][4]}

SAFETY INFORMATION

pictograms



signalword

Danger

hcodes

H225,H318,H411

pcodes

P210 - P233 - P240 -
P273 - P280 - P303 +
P351 + P338

Hazard Classifications Aquatic Chronic 2 - Eye Dam. 1 - Flam. Liq. 2	Storage Class 3 - Flammable liquids	wgk_germany WGK 2	flash_point_f 5.0 °F - closed cup
flash_point_c -15 °C - closed cup	ppe Eyeshields, Faceshields, Gloves, type ABEK (EN14387) respirator filter		

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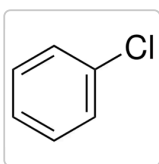
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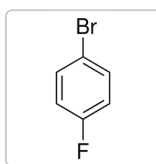
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Journal of the American Chemical Society, 133(48), 19505-19511 (2011)

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Sensory properties are critical characteristics that determine quality and can be evaluated by trained tasting panels. The panels function as multi-sensor measuring instrument and need the use of reference materials (RMs) for training. The homogeneity between units packaged from a

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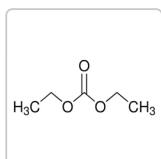
Lucia Valverde-Som et al.

Journal of the science of food and agriculture, 98(11), 4245-4252 (2018-02-10)

The organoleptic quality of virgin olive oil depends on positive and negative sensory attributes. These attributes are related to volatile organic compounds and phenolic compounds that represent the aroma and taste (flavour) of the virgin olive oil. The flavour is

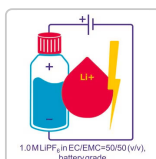
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