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Whey Ingredients

WHEY INGREDIENTS

[> Alpha-lactalbumin](#)[> Beta-lactoglobulin](#)[◊ **γ Whey**](#)

Dry Whey Standard

v 4.0 | Effective 07/04/2023

Product Definition

Whey is the liquid substance obtained by separating the coagulum from milk, cream, or skim milk in cheesemaking. **Dry Whey** is the substance obtained by the removal of water from **whey**, while leaving all other constituents in the same relative proportions as in **whey**.

Dry **Sweet Whey** shall have not greater than 0.16% titratable acidity on a reconstituted basis. Dry Acid **Whey** shall have greater than 0.35% titratable acidity on a reconstituted basis.

Dry Whey complies with all provisions of the U.S. Federal Food, Drug, and Cosmetic Act.

- > Lactoferrin
- > Milk Whey Protein
- > Reduced Lactose Whey
- > Reduced Minerals Whey
- > Whey Protein Concentrate
- > Whey Protein Isolate

> Infant Formula Grade Whey Protein Phospholipid Concentrate

> Whey Protein Hydrolysates Definition

> Whey Protein Phospholipid Concentrate

> Other Whey Products

Manufacturers

Traders/Brokers

Standard: Printable PDF

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Composition for Extra Grade Dry Whey

		Dry Sweet Whey	Dry Acid Whey
Parameter	Units of Measure	Limits	Limits
Fat	%	1.5 maximum	
Total moisture	%	5.0 maximum	
Scorched particles (1)	mg/25g	15.0 maximum	
Titratable acidity (2)	%	0.16 maximum	0.35 minimum

+ MILK INGREDIENTS

+ CARBOHYDRATE INGREDIENTS

+ MILKFAT INGREDIENTS

(1) **Scorched particles** requirements ordinarily appear in **ADPI** Standards in the section defining Other Characteristics, but they are included here because they are integral to the established **USDA** requirements for Extra Grade.

(2) Titratable acidity is not part of the basis for grade determination but is included only to differentiate between sweet-type and acid-type **whey** products.

Other Characteristics of Extra Grade Dry Whey

Physico-chemical Properties

		Dry Sweet Whey	Dry Acid Whey
Parameter	Units of Measure	Limits	Limits
Color and appearance	visual	uniform color, off-white to cream; free-flowing, free from lumps that do not break up under slight pressure; practically free from visible dark particles	
Flavor	sensory	normal whey flavor, free from undesirable flavors, but may possess the following flavors to a slight degree: bitter, fermented, storage, and utensil; and the following to a definite degree: feed and weedy	

Microbiological Analysis

		Dry Sweet Whey	Dry Acid Whey
Parameter	Units of Measure	Limits	Limits
Standard plate count	CFU/g	30,000 maximum	
Coliforms	CFU/g	10 maximum	

Optional Tests for Extra Grade Dry Whey

Other tests which may be made on **Dry Whey** products (not mandatory for grade designation, but, if determined, must comply with the limits as indicated) are:

		Dry Sweet Whey	Dry Acid Whey
Parameter	Units of Measure	Limits	Limits
Protein	%	11 minimum	
Alkalinity of ash	mL 0.1 N HCl/100g	225 maximum	n/a

When it is determined that **Dry Whey**:

- 1. fails to meet the requirements of Extra Grade (3);
- 2. fails to meet the requirements of any Optional Test, when such test has been made (3); OR
- 3. has been produced in a plant found on inspection to be using unsatisfactory manufacturing practices, equipment, or facilities, or to be operating under unsanitary plant conditions;

then it shall not be assigned a grade.

(3) When tested in accordance with the standardized methods of analysis contained herein

Additional ADPI Specifications

ADPI imposes the following additional requirements on **Dry Whey**:

		Dry Sweet Whey	Dry Acid Whey
Parameter	Units of Measure	Limits	Limits
Yeast and mold	CFU/g	100 maximum	

		Dry Sweet Whey	Dry Acid Whey
Parameter	Units of Measure	Limits	Limits
Enterobacteriaceae (4)	CFU/g	10 maximum	
Salmonella genus	CRU/sample (5)	not detected	
Staphylococcus (coagulase positive)	CFU/g	not detected (6)	
Listeria genus	CFU/g	not detected	

(4) The food industry is trending toward *Enterobacteriaceae* (“EB”) as the most commonly used category of indicator organisms for gauging general process sanitation. For compliance with this Standard, [coliforms](#) shall be utilized for compliance with the [USDA](#) Extra Grade requirements, while EB may be used at the discretion of the manufacturer.

(5) Typical minimum sample size for *Salmonella* testing is 25 g, but the exact sample size and methodology is left to the discretion of the manufacturer.

(6) Where the effective limit of quantitation for the test is 10 CFU/g (such as when a dilution factor of 10 is applied) then the test result must be not detected in order to comply with this Standard. Where the testing method is capable of quantifying microbial counts below 10 CFU/g, then a compliant result must be a value less than 10 CFU/g.

Codex Alimentarius Specifications for Dry Whey

Codex requirements for [Dry Whey](#) are as follows:

		Dry Sweet Whey	Dry Acid Whey
Parameter	Units of Measure	Limits	Limits
Protein	%	11 minimum	7 minimum
Moisture	%	5.0 maximum	4.5 maximum
Lactose	%	65 minimum	n/a
Ash	%	8.5 maximum	15.0 maximum
Titratable acidity	% pH	0.16 maximum 6.0 minimum	0.35 minimum 5.1 maximum

Permissible Additives

Dry Whey may be pH adjusted with an appropriate mineral or organic acid or base. Any pH adjustment agent used for this purpose shall be food grade and shall be used in accordance with U.S. current Good Manufacturing Practices and in accordance with its GRAS status, where applicable.

Preservatives are not permitted in Dry Whey.

Product Labeling

Recommended identifications:

- Dry Sweet Whey
- Dry Acid Whey
- Dry Whey ___% titratable acidity

for Dry Whey over 0.16%, but below 0.35%, titratable acidity on a reconstituted basis; where the titratable acidity is declared as the actual percentage, and where the supporting analysis must also be supplied.

Methods of Analysis

ADPI Methods of Analysis

Parameter	Reference Method
Protein	AOAC 991.20 (N x 6.38)
Fat	AOAC 989.05
Total Moisture	AOAC 925.45
Scorched particles	ADPI
Titrateable acidity	AOAC 947.05
Alkalinity of ash	AOAC 941.07
Standard plate count	SMEDP
Coliforms	SMEDP
Yeast and mold	FDA BAM
Enterobacteriaceae	FDA BAM
Salmonella	AOAC
Staylococcus	AOAC
Listeria	FDA BAM

▸ Typical Applications

▸ Typical Storage & Shipping

▸ TypicalPackaging

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