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2.1 UNITED STATES DEPARTMENT OF AGRICULTURE STANDARDS, GRADING SERVICES

United States Department of Agriculture (USDA)

The USDA, Agricultural Marketing Service (AMS), Dairy Standardization Branch has developed United States standards and United States specifications for many dairy products. These standards and specifications provide measures of quality based on attributes essential to buyers and consumers, such as flavor and keeping quality. The standards and specifications ensure a nationally and internationally understood language for efficient, orderly trade. The requirements for dry whey can be found in "United States Standards for Grades of Dry Whey." The nomenclature for the U.S. grade is "U.S. Extra." The U.S. grade of dry whey is determined on the basis of flavor, physical appearance, bacterial estimate, coliform count, milkfat content, moisture, and scorched particle content.

To be assigned a grade by the USDA, dry whey must meet the requirements of U.S. Extra Grade. This standard became effective December 14, 2000. It is available from the:

United States Department of Agriculture
Agricultural Marketing Service
Dairy Programs,
Dairy Standardization Branch
Room 2746-S

1400 Independence Avenue, SW
Washington, DC 20250-0230 USA
Phone: 1-202-720-7473

Fax: 1-202-720-2643

www.ams.usda.gov/dairy

Inspection and Grading Services

When you buy U.S. Extra Grade dry whey you are assured it is a wholesome, high quality product. The USDA, Agricultural Marketing Service (AMS), Dairy Grading Branch, provides this assurance. The grade standards and grading services, together, provided by the USDA aid in the orderly marketing of dairy products. For both buyers and sellers, this service guarantees the product meets specific grade or contract requirements, has uniform quality, and has good keeping quality. In order to have dry whey graded, the manufacturer must have their production facilities surveyed by the USDA.

United States Standards For Dry Whey U.S. Extra Grade

Flavor*	Normal, free from undesirable flavors
Physical appearance	Uniform color, free flowing, free from lumps, practically free from visible dark particles
Bacterial estimate SPC**	≤ 30,000/g
Coliform	≤ 10/g
Milkfat	≤ 1.50%
Moisture	≤ 5.0%
Scorched particle content	≤ 15.0mg
Acidity	Not a requirement for grade. Helps to differentiate sweet from acid whey. This information is provided on the certificate.
Optional tests***	
Protein (Nx6.38)	≥ 11%
Alkalinity of ash****	≤ 225 ml 0.1 N HCl/100g

* Applies to the reliquified form.

** SPC = Standard plate count

*** These are optional requirements which are in addition to those listed above. Tests for these requirements may be run occasionally at the option of the U. S. Department of Agriculture and will be run whenever an interested party requests them.

**** Applies to sweet-type whey only.

2.2 PLANT SURVEYS

An experienced, highly trained dairy inspector conducts the plant survey. The survey involves detailed checks of more than 100 items. Only plants that meet these requirements are granted an “Approved Status” and are eligible for grading, quality control, and certification services. Manufacturing plants that have been granted an “Approved Status” are listed in the quarterly published booklet “Dairy Plants Surveyed and Approved for USDA Grading Service.” It is available from the:

United States Department of Agriculture
Agricultural Marketing Service
Dairy Programs,
Dairy Grading Branch
Room 2746-S
1400 Independence Avenue, SW
Washington, DC 20250-0230 USA
Phone: 1-202-720-3171
Fax: 1-202-720-2643

www.ams.usda.gov/dairy/grade.htm

Inspection and Grading

The USDA offers many inspection and grading services to provide assurance of wholesome and high-quality products. These services include but are not limited to confirmation of grade, compositional analysis, condition of container examination, test weighing, and dispute resolution. The grader assures the integrity of all samples and examines each sample to determine compliance to the grade standard or contract specification. The results of the evaluations for products that comply with the standard or specification are documented on an official USDA certificate.

Some of the items on the dairy inspector's list include:

1. The plant surroundings must be clean to prevent bacterial or environmental contamination and maximize product safety.
2. Facilities must be of sound construction.
3. Areas such as the raw milk receiving, ingredient receiving, manufacturing, pasteurizing, packaging, supply storage and warehousing must have adequate lighting to facilitate inspection of products and the proper cleaning of equipment and facilities.
4. Incoming raw product is graded on a regular basis.
5. Incoming milk must be regularly analyzed to ensure high quality and product safety.
6. All processing equipment must be of a sanitary design, be properly maintained, and be properly cleaned to assure the buyer that the whey is protected from contamination.
7. Product handling practices, employee practices, and process controls must be maintained to assure product quality and safety.
8. Packaging and storage practices must be maintained to assure that product quality and safety are maintained for the buyer.

2.3 EXPORT CERTIFICATION AND LABORATORY SERVICES

Export Certification Services

Export certifications or attestations are routinely required by importing countries to document that products are fit for human consumption, are produced under sanitary wholesome conditions, are free from animal diseases, and are federally inspected. The USDA can provide export certifications meeting the requirements of most importing countries. The USDA, Dairy Grading Branch, is the authorized certification authority for dairy products destined for the European Union.

Laboratory Service

Laboratory service consists of analytical and quality control tests, including all chemical and bacteriological determinations essential in evaluation of class, quality, condition, and keeping properties. Exacting laboratory tests guarantee the quality and wholesomeness of the product. For example, dry whey requires five laboratory tests and a flavor test.

Personnel

The men and women who perform these services are experienced, well trained, and under the supervision of the USDA. Many product graders and plant inspectors are college graduates with majors in dairy manufacturing or food technology, and have held responsible jobs in the dairy industry.

Photo courtesy: Hilmar Cheese Company



2 QUALITY STANDARDS, QUALITY ASSURANCE AND CERTIFICATIONS

The American Dairy Products Institute (ADPI)

ADPI has developed a variety of specifications for whey and related products, which can be beneficial for export marketing. Examples of such specifications are presented below. For additional information on ADPI's product specifications please contact the organization at:

American Dairy Products Institute
166 North York Street
Elmhurst, Illinois 60126 USA
Phone: 1-630-530-8700
Fax: 1-630-530-8707
www.adpi.org

2.4 KOSHER AND HALAL CERTIFICATION

Suppliers can obtain voluntary kosher or Halal certification from internationally recognized certification organizations. Due to the religious significance and sensitivity of the requirements for kosher or Halal certification, buyers are encouraged to contact suppliers well in advance so that appropriate sources of whey can be obtained. For additional information, please contact your supplier.

2.5 STATE DEPARTMENTS OF AGRICULTURE

Entities at the state level also certify processing plants. For additional information, please contact your supplier.

2.6 OTHER CERTIFICATION AND TESTS

In some cases, plants are also approved to meet industry standards to supply other industries. Some examples include American Institute of Baking, ISO 9000 Certification, PMO (Pasteurized Milk Ordinance), USPHS (United States Public Health Service), EPA (Environmental Protection Agency), etc. In addition, individual suppliers may have additional production, and finished product record keeping testing.

ADPI Typical Compositional Ranges

Criteria	Dry Whey (Sweet Type)	Permeate/Dairy Products Solid	Reduced Minerals Whey	Whey Protein Concentrate	Whey Protein Isolate
Protein	11.0–14.5%	3.0–5.0%	11.0–15.0%	34.0–79.9%	92.0%
Lactose	63.0–75.0%	65.0–85.0%	70.0–80.0%	10.0–55.0%	0.5%
Milkfat	1.0–1.5%	0.0–1.5%	0.5–1.8%	1.0–10.0%	1.0%
Ash	8.2–8.8%	8.0–20.0%	1.0–7.0%	4.0–8.0%	2.0%
Moisture	3.5–5.0%	3.0–5.0%	3.0–4.0%	3.0–4.0%	4.5%
SPC*	≤ 30,000/g	≤ 30,000/g	≤ 30,000/g	≤ 30,000/g	≤ 30,000/g
Coliform	≤ 10/g	≤ 10/g	≤ 10/g	≤ 10/g	≤ 10/g
Salmonella	Neg. by test	Neg. by test	Neg. by test	Neg. by test	Neg. by test
Listeria	Neg. by test	Neg. by test	Neg. by test	Neg. by test	Neg. by test
Coagulase-positive Staphylococci	Neg. by test	Neg. by test	Neg. by test	Neg. by test	Neg. by test
Scorched particles	7.5–15.0mg	7.5–15.0mg	7.5–15.0mg	7.5–15.0 mg	7.5–15.0 mg
Titrate acidity	0.10–0.15%	0.10–0.15%	–	–	–
pH	5.8–6.5		6.2–7.0	6.0–6.7	6.7–7.5
Color	Off white to cream	Off white to cream	Cream to dark cream	White to light cream	White to light cream
Flavor**	Normal whey flavor	Normal whey flavor	Normal whey flavor	Bland, clean	Bland, clean
Alkalinity of ash	≤ 225 ml 0.1 N HCL/100g				

* SPC = Standard plate count

** Applies to the reliquified form

Note: The ingredient statement shall state the percent of the characterizing component (lactose, minerals, or protein.) The percent is declared in 5% increments for lactose and protein, 2% increments for minerals and whey protein isolate, or as actual percentage, provided an analysis of the product is supplied.

Source: ADPI Ingredient Description Brochure, Revised 1998.