



United States Department of Agriculture

Marketing and
Regulatory
Programs

Agricultural
Marketing
Service

Dairy
Program

United States Scorched Particle Standards for Dry Milk

**Effective January 26, 1951
(Reprinted – December 2018)**

Non-Discrimination Policy: In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotope, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.

United States Scorched Particle Standards for Dry Milk

Section	Page No.
§ 58.2676 United States sediment scorched particle standards for dry milks.	4
§ 58.2677 Preparation of discs.....	4
§ 58.2678 General.....	5

§ 58.2676 United States sediment scorched particle standards for dry milks.

The standards contained in this subpart consist of four (4) discs, each of which represents one of the following:

- 7.5 mg. of scorched particles.
- 15.0 mg. of scorched particles.
- 22.5 mg. of scorched particles.
- 32.5 mg. of scorched particles.

§ 58.2677 Preparation of discs.

Each of the four (4) discs was prepared in accordance with the procedure set forth in this section.

- (a) Spread five grams of nonfat dry milk solids evenly over a petri dish and heat at 119°C. for four hours to produce scorched particles.
- (b) After heating, keep in desiccator until the particles are weighed.
- (c) Prepare scorched particle solution by mixing 0.50 gram of the scorched particles (prepared in accordance with paragraph (a) of this section) gently with approximately 20 ml. of a 50 percent filtered sucrose solution. Transfer the mixture to a 200 ml. volumetric flask and dilute to volume using a 50 percent filtered sucrose solution and mix thoroughly.
- (d) To provide particles which, in appearance, are similar to highly scorched, or burned, protein particles, prepare at least 1.0 gram of a charcoal mixture by using the following specified percentages of charcoal of the designated meshes:
 - 200 mesh charcoal: 20 percent.
 - 150 mesh charcoal: 50 percent.
 - 100 mesh charcoal: 20 percent.
 - 65 mesh charcoal: 10 percent
- (e) Prepare charcoal solution by placing 1.0 gram of the charcoal mixture (prepared in accordance with paragraph (d) of this section) in a one-liter volumetric flask and dilute to volume, using a 50 percent filtered sucrose solution and mix thoroughly.
- (f) Prepare each of the following sample solutions:
 - 1. *Sample solution 1.* Mix 75 ml. of filtered, reconstituted, spray process nonfat dry milk solids with (i) a quantity of scorched particle solution containing scorched particles aggregating 7.425 mg. and (ii) a quantity of charcoal solution containing charcoal particles aggregating 0.075 mg. The particle content of this sample solution is 7.5 mg.
 - 2. *Sample solution 2.* Mix 75 ml. of filtered, reconstituted, spray process nonfat dry milk solids with (i) a quantity of scorched particle solution

containing scorched particles aggregating 14.85 mg. and (ii) a quantity of charcoal solution containing charcoal particles aggregating 0.15 mg. The particle content of this sample solution is 15.0 mg.

3. *Sample solution 3.* Mix 75 ml. of filtered, reconstituted, spray process nonfat dry milk solids with (i) a quantity of scorched particle solution containing scorched particles aggregating 22.2 mg. and (ii) a quantity of charcoal solution containing charcoal particles aggregating 0.30 mg. The particle content of this sample solution is 22.5 mg.
 4. *Sample solution 4.* Mix 75 ml. of filtered, reconstituted, spray process nonfat dry milk solids with (i) a quantity of scorched particle solution containing scorched particles aggregating 31.9 mg. and (ii) a quantity of charcoal solution containing charcoal particles aggregating 0.60 mg. The particle content of this sample solution is 32.5 mg.
- (g) Stir each sample solution immediately prior to filtering and filter through a standard lintine disc (1¼" diameter) using a filtering surface of 1 1/8" diameter. Rinse the container of each sample solution with filtered, reconstituted, spray process nonfat dry milk solids and filter the rinse through the applicable disc.
- (h) Dry the discs at room temperature.

§ 58.2678 General.

To facilitate the use and availability of these scorched particle standards, a composite photograph of the four (4) discs is made a part hereof; and a copy of the photograph may be obtained, upon request, from Dairy Program, Agricultural Marketing Service, U.S. Department of Agriculture, Washington, DC 20250.