

Scorched Particles

GEA Niro analytical method A 4 a

(Page 1 of 3)

1. Definition

The amount of scorched particles in a powder is determined by comparison with the ADMI chart: 'Scorched Particle Standards for Dry Milk'.

2. Scope

This method is used for milk powder and all other dried dairy products.

3. Principle

4. Apparatus

- 4.1 Original ADMI chart 'Scorched Particle Standard for Dry Milk' (see Fig. 1).
- 4.2 Balance, sensitivity 0.1 g.
- 4.3 Cenco Mixer, Cenco Instrumenten B.V, Breda, The Netherlands.
- 4.4 Standard filter pads - diameter 32 mm (1¼"), Lintine brand, milk-cream sediment testers, Johnson & Johnson.
- 4.5 Scorched particles tester - aspirator or pressure type, filtering diameter 28.5 mm (1⅛"), Nagashima S.S. Ltd.
- 4.6 Water jet pump.

5. Reagents

Defoaming agent – Octylalcohol or diglycol laurate S.

6. Procedure

- 6.1 Weigh out the correct amount of powder ± 0.1 g:

Non-fat milk:	25.0 g
Whey:	15.0 g
Whole milk:	32.5 g
- 6.2 Pour the powder into the blender glass with 250 ml of 18-27°C water.
- 6.3 Add 2 or 3 drops of defoaming agent.
- 6.4 Mix for 60 seconds in the Cenco Mixer.
- 6.5 Using a vacuum to filter the solution immediately through the filter in the tester. Rinse the blender glass with about 50 ml water and filter it through the same filter.
- 6.6 Let the filters dry for 2 hours at approx. 35°C.
- 6.7 Measurements are carried out as single determinations.

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Scorched Particles GEA Niro analytical method A 4 a

(Page 2 of 3)

7. Results

Compare the results with the original ADMI standard chart. The comparison is visual. The standard chart is divided into a scale from A-D, where

A = 7.5 mg

B = 15.0 mg

C = 22.5 mg

D = 32.5 mg

If a sample is classified as being between two standards it is always set at the highest value. A sketch of the ADMI chart is shown on Fig. 1.

8. Reproducibility

Single determination.

9. Remarks

9.1 The filtration (E4) can also be carried out with compressed air.

9.2. The procedure for caseinate and casein:

9.2.1 Weigh out 25 g powder \pm 0.1 g.

9.2.2 Pour the powder into 200 ml sodium carbonate 9.09% V/W.

9.2.3 Add 300 ml of 18-27°C water.

9.2.4 Add 2 or 3 drops of defoaming agent.

9.2.5 Mix for 60 seconds in the Cenco Mixer.

9.2.6 Use a vacuum to filter the solution immediately through the filter in the tester. Rinse the blender glass with about 50 ml water and filter it through the same filter.

9.2.7 Let the filter dry for 2 hours at approx. 35°C.

9.2.8 Measurements are carried out as single determinations.

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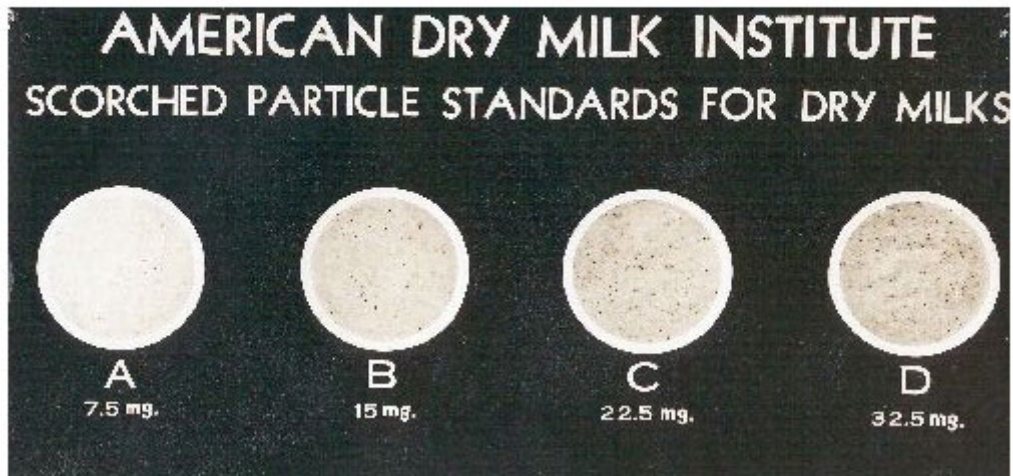
GEA Niro analytical method A 4 a

(Page 3 of 3)

10. Reference

- [GEA Niro Research Laboratory](#)
- [ADPI](#), Bulletin 916. (previously called ADMI, American Dry Milk Institute)
- Modification of the Harland-Ashworth method, published by Kuramoto, Jeness, Coulter and Choi. Journal of Dairy Science 42:28, 1959.

Fig.1 ADMI chart 'Scorched Particles Standards for Dry Milk'



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