

Mechanical Stability of Agglomerated Milk Powder

GEA Niro analytical method A 13 a

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1. Definition

The mechanical stability is expressed as percentage of broken down particles during mechanical treatment by sieving.

2. Scope

The method is to be used for agglomerated powder.

3. Principle

The fraction of particles smaller than the size of the sieve is removed by gentle hand sifting. The remaining part of the original powder is thereafter mechanically treated by sieving for 10 minutes, and the amount of created smaller particles is determined.

4. Apparatus

1. Balance - sensitivity ± 0.01 g
2. Shaker for sieves, [Engelsmann](#), Germany (Fig. 1)
3. Sieves – 150 μ or 250 μ (incl. lid and base)
4. Brush.

5. Reagents

None.

6. Procedure

1. Depending on the type of powder choose an appropriate sieve:
Spray agglomerated instant powder: 150 μ
Rewet agglomerated instant powder: 250 μ
2. Manually sieve 60-80 g of powder to separate the fines from the agglomerates.
3. Weigh out 50 g of the powder remaining on the sieve.
4. Clean the sieve carefully. Place 50 g of powder on the sieve, and sieve for 10 minutes on the shaker.
5. Weigh the powder remaining on the sieve.

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7. Result

$$\text{Mechanical stability, \%} = \frac{a \times 100}{b}$$

a = g powder left on the sieve

b = g powder weighed on the sieve

8. Reproducibility

± 1 %

9. Remarks

N/A

10. Literature

[GEA Niro Research Laboratory](#)

Fig. 1 Shaker for sieves.



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