



Flowability

GEA Niro analytical method A 23 a

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1. Principle

Flowability is the ability of a powder to flow, and it is measured as the time in seconds necessary for a given volume of powder to leave a rotary drum through a slit of a certain size.

2. Scope

This method may be used for all powders, dairy and non-dairy products.

3. Apparatus

1. Motor with gear suitable for running at 30 rpm.
2. Stainless steel drum as shown in Fig. 1.
3. Stop watch.

4. Procedure

1. Determine the bulk density tapped 100 times in g/cm^3 by using GEA Niro Analytical Method A 2 a.
2. Weigh out an amount of powder ± 0.1 g corresponding to:
 $A = B \times 25$
A = amount of powder in g
B = bulk density in g/cm^3 tapped 100 times.
3. Pour the powder into the drum and put on the lid.
4. Start the drum (set at 30 rpm) and the stop watch simultaneously.
The drum should rotate so that the powder that is not leaving the drum through the slits is broken up by the metal rod 24° later.
This is very important when measuring sticky products.
5. When the last powder has left the drum, stop the watch and record the time.
6. The determination has to be made in duplicate.

5. Result

Flowability = average time in sec.

Record the results in sec.

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Two determinations must not differ more than shown below, if they do, repeat the analysis.

Flowability	Reproducibility
< 30 sec.	20% relative
> 30 sec.	10% relative

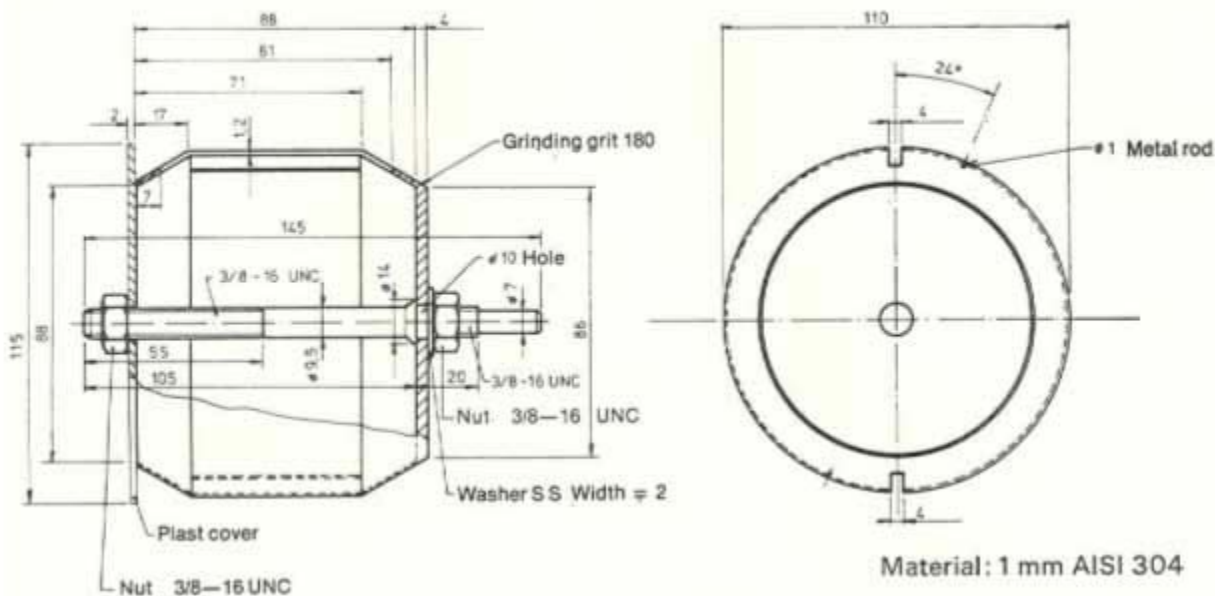
6. Remarks

The method is in principle not designed for powders containing agglomerates >4 mm. However, when testing powders containing some agglomerates >4 mm, the watch should be stopped, when powder ceases to flow out of the drum.

7. Reference

Own experience.

Fig 1. Drum for determination of flowability



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