

Bulk Index/Bulk Density (Manual Method)

Purpose: To determine bulk index and bulk density.

A. Apparatus:

1. Nalgene graduated cylinders, 250 mL, 500 mL, and 1000 mL capacity. (Note 1)
2. Balance, ± 0.1 g at 100 g.
3. Ring stand and ring clamp.

B. Reagents:

1. None.

C. Preparation of Sample:

1. Use as is.

D. Procedure:

1. Weigh 100 g of sample and place in graduated cylinder of appropriate size. Weigh 50g of parsley flakes or other bulky materials exceeding 1000 mL volume. (Note 2)
2. Place cylinder on ring stand and adjust ring clamp so that, when base of cylinder is raised to touch the ring, the bottom surface of the cylinder is exactly one inch from the base of ring stand.
3. Drop cylinder (1 inch) 50 times and record volume to nearest 2 mL for 250, 5 mL for 500, or 10 mL for 1000 mL graduated cylinder.

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E. Calculations:

$$\text{Bulk Index} = \frac{\text{Volume of Product (mL)}}{\text{Sample Weight (g)}} \times 100$$

$$\text{Bulk Density g/mL} = \frac{\text{Sample Weight (g)}}{\text{Volume of Product (mL)}}$$

F. Statistics:

TBD

G. Notes:

1. Nalgene graduated cylinders with the following inside dimensions are recommended:

Volume	Inside Diameter	Inside Height
250 mL	1 3/8"	13"
500 mL	1 13/16"	14 1/2"
1000 mL	2 7/16"	16 1/2"

2. Loose bulk density can be determined by reading the volume in the graduated cylinder before manual tapping.

H. References:

N/A