



## Method 8.16 – Refined sugar: bulk density

### 1. Rationale

This method is applicable to granulated refined and white sugars.

### 2. Principle

The mass and volume of a sugar sample is measured to calculate the bulk density (mass per volume).

### 3. Apparatus

- 3.1 **Funnel** mounted in a stand
- 3.2 **Measuring cylinder:** 500 cm<sup>3</sup>
- 3.3 **Balance** readable to 0.01 g

### 4. Procedure

Thoroughly mix the sample. Weight the measuring cylinder in grams and place under the outlet of the funnel. Fill the funnel with the sample and let the sample run freely into the measuring cylinder until just below the 500 cm<sup>3</sup> mark. Weigh the measuring cylinder and contents and note the exact volume of the sugar in litres.

### 5. Expression of results

$$\text{Bulk density (g/litre)} = \frac{(M_2 - M_1)}{V}$$

where

M <sub>1</sub>	≡	mass of the measuring cylinder (g)
M <sub>2</sub>	≡	mass of the measuring cylinder and contents (g)
V	≡	volume of the sugar (litres)

### 6. References

Hulett's Refinery (1996). Bulk density determination. *Hulett's Refinery Test Methods*, Section 6.9.