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# Australian Standard 2226—1980

# REES-HUGILL POWDER DENSITY FLASK

STANDARDS ASSOCIATION OF AUSTRALIA
*Incorporated by Royal Charter*

THE FOLLOWING INDUSTRIAL, SCIENTIFIC AND GOVERNMENTAL organizations and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Medical Association

Chambers of Commerce (N.S.W., Vic.)

Chief Secretary's Department, Victoria

Commonwealth Serum Laboratories

Confederation of Australian Industry

CSIRO, Division of Applied Physics

Department of Agriculture, N.S.W.

Department of Science and the Environment

Government Chemical Laboratories, W.A.

National Standards Commission

Railways of Australia Committee

Royal Australian Chemical Institute

University of Sydney

Victorian State Laboratories

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AUSTRALIAN STANDARD

# REES-HUGILL POWDER DENSITY FLASK

## AS 2226—1980

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# PREFACE

This standard was prepared by the Association's Committee on Laboratory Glassware and Related Apparatus under the direction of the Chemical Standards Board, in response to a request from the Committee on Refractories in order to provide for apparatus for the rapid and accurate determination of the density of powdered or granular materials. The use of this flask outside the refractories industry has been rather limited, but may well be extended when its convenience in control testing is more widely known.

The standard is based on BS 2701. Australian standards normally express density in terms of the SI unit which is kilograms per cubic metre. However, because these flasks are imported, the BSI practice of expressing powder density in grams per cubic centimetre has been retained in this standard.

This standard requires reference to the following standards:

AS 1774 Methods for Physical Testing of Refractories and Refractory Materials
Part 25—The Determination of Powder Density (Using Rees-Hugill Flask)

AS 2243 Code of Practice for Safety in Laboratories
Part 2—Chemical

STANDARDS ASSOCIATION OF AUSTRALIA

# Australian Standard
# for
# REES-HUGILL POWDER DENSITY FLASK

**1 SCOPE.** This standard specifies requirements for a flask, with graduated neck, suitable for the determination of the density of powdered or granular materials. A method of use is given in Appendix B.

**2 RANGE.** The flask shall have a lower bulb of approximately 250 mL capacity with a graduated neck giving direct readings of density in the range 2.00 g/cm³ to 2.70 g/cm³* when used with a 100 g sample. When the flask is required for determination of the density of a material which is outside this range, the mass of sample used must be modified accordingly. If this mass is 'm' grams and 'R' is the resultant scale reading, then the density of the sample is given by 'Rm/100'. Table 1 provides examples of other sample masses to be used when the range of densities is outside the nominal range of the scale.

**TABLE 1**

**RELATIONSHIP BETWEEN DENSITY RANGE AND MASS OF SAMPLE TAKEN**

| Density range covered by the graduated scale g/cm³ | Mass of sample taken g |
|---|---|
| 2.40 — 3.24 | 120 |
| 3.00 — 4.05 | 150 |

**3 DEFINITION.** For the purpose of this standard, the following definition applies:

*Capacity at any graduation line*—the additional volume of water, at 20°C, which must be added to the flask, already filled to the datum mark at 20°C, in order to bring the water surface up to that graduation line, the lowest point of the water meniscus being adjusted to the top edge of the datum mark and the graduation line respectively.

**4 MATERIAL.** The flask shall be made of clear glass, as free as possible from visible defects, and shall be reasonably free from internal strain.

*Equivalent to 2000 kg/m³ to 2700 kg/m³.