

CONFIRMED
DECEMBER 2007

Specification for
Sugar flasks

Co-operating organizations

The Scientific Glassware and Related Laboratory Apparatus Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:—

- Admiralty*
- Air Ministry
- Association of British Chemical Manufacturers*
- Association of Scientific Workers
- Board of Trade
- British Association for the Advancement of Science*
- British Chemical Ware Manufacturers' Association*
- British Laboratory Ware Association*
- British Lampblown Scientific Glassware Manufacturers' Association*
- British Pharmacopœia Commission
- British Scientific Instrument Research Association
- Chemical Society
- Department of the Government Chemist*
- D.S.I.R. — Chemical Research Laboratory
- Glass Manufacturers' Federation*
- Institute of Petroleum*
- Ministry of Education
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- Oil Companies Materials Committee
- Pharmaceutical Society of Great Britain
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- Science Masters' Association
- Society of Chemical Industry
- Society of Glass Technology*
- Society of Public Analysts and Other Analytical Chemists*
- Standardization of Tar Products Tests Committee*

The Government departments and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:—

- Association of Hospital Management Committees
- Guild of Public Pharmacists
- Metropolitan Water Board
- Office of the High Commissioner for India
- University of London (Faculty of Science)
- Individual manufacturers

This British Standard, having been approved by the Scientific Glassware and Related Laboratory Apparatus Industry Standards Committee and endorsed by the Chairman of the Chemical Divisional Council, was published under the authority of the General Council on 11 February 1953

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First published June 1936
First revision February 1953

ISBN 0 580 34572 6

Amendments issued since publication

Amd. No.	Date of issue	Comments
1776	December 1953	
4899	April 1963	Indicated by a sideline in the margin

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Foreword

This standard makes reference to the following British Standards:—

BS 615, *Kohlrausch flasks*.

BS 1797, *Tables for use in the calibration of volumetric glassware*.

This British Standard, which was first published in 1936, specifies two types of flask for use in sugar analysis: a type with two graduation marks suitable for the analysis of sugar factory juices; and a type of greater accuracy, with one graduation mark, suitable for the polarization of sugars.

The flasks with two graduation marks are provided in three sizes, of 50/55 ml., 100/110 ml. and 200/220 ml. capacity respectively. The dimensions are based on a specification drawn up in 1932 by the South African Sugar Technologists' Association in which particular importance was attached to the provision of an adequate air space above the upper graduation mark to ensure thorough mixing of the contents of a flask on shaking. In order to provide the air space considered necessary, without making the flasks unduly tall, the necks are made rather wide, but the accuracy of the flasks fully meets the requirements of juice analysis. The shape adopted for the bulb gives a wide base and minimizes the tendency for bubbles to cling to the walls below the neck.

A single graduation mark only is required for the polarization of sugars and the high degree of accuracy needed demands a narrow neck. Ordinary straight-necked volumetric flasks have been used for this purpose and also Kohlrausch flasks, described in BS 615. A special 100 ml. flask, the Mann sugar flask, was included in the 1936 edition of this standard, but subsequent experience has shown that it does not satisfy all requirements. The polarization flask now specified has been designed to include the best features of the various flasks previously in use and has been approved after test by sugar technologists representing the biggest users in the country. The design allows the maximum possible accuracy combined with convenience in use. The flask combines narrowness of neck at the graduation mark with an upper enlargement, which is a safeguard against overflow when sugar is being washed into the flask and also provides adequate space for mixing when the flask is shaken. It has also the practical advantage that it can be closed with the thumb and shaken with one hand with the utmost ease and with complete assurance that no liquid escapes during the shaking. The pear-shaped bulb is considered more convenient than the conical or rounded form.

In this revision no minimum weights for the flasks have been included, and instead a robust flask is specified in Clause 5.

SUBSIDIARY STANDARD TEMPERATURE OF 27 °C.

At the Second Meeting, in 1951, of Technical Committee ISO/TC 48 — Laboratory Glassware and Related Apparatus, of the International Organization for Standardization, it was agreed to qualify as follows the acceptance of 20 °C. as the standard temperature for volumetric glassware:—

“When it is necessary in tropical countries to work at an ambient temperature considerably above 20 °C., and these countries do not wish to use exclusively the standard temperature of 20 °C., it is recommended that they should adopt a temperature of 27 °C.”

In order to meet the requirements of such tropical countries it has been decided to amend the British Standards for volumetric glassware to permit 27 °C., as an alternative to 20 °C.

In the present British Standard this amendment applies to Clauses 3 and 9, to Appendix B, and to Figure 1 and Figure 2.