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British Standard Methods of test for

97年08月 22

### Boric acid, boric oxide, *disodium* tetraborates, sodium perborates and crude sodium borates for industrial use 98年7月 2

Part 13. Determination of particle size distribution of sodium perborates by mechanical sieving  
[ISO title: Sodium perborates for industrial use – Determination of particle size distribution by mechanical sieving]

200 4年6月 3日

Méthodes d'essai de l'acide borique, de l'oxyde borique, des tétraborates disodiques, des perborates de sodium et des borates de sodium bruts à usage industriel

Partie 13. Analyse granulométrique des perborates de sodium par tamisage mécanique

Prüfmethoden für Borsäure, Bortrioxid, Dinatriumtetraborate, Natriumperborate und rohe Natriumborate für industrielle Verwendung

Teil 13. Bestimmung der Teilchengrößenverteilung von Natriumperboraten durch mechanische Sieben

NOTE. It is recommended that this Part be read in conjunction with the information in the 'General introduction', published separately as BS 5688 : Part 0.

99年7月 20

99年

#### National foreword

This Part of BS 5688 is identical with ISO 3118 'Sodium perborates for industrial use – Determination of particle size distribution by mechanical sieving' published by the International Organization for Standardization (ISO).

**Terminology and conventions.** The text of the international standard has been approved as suitable for publication, without deviation, as a British Standard. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn to the following.

The comma has been used throughout as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Where the words 'International Standard' appear, referring to this standard, they should be interpreted as 'British Standard'.

#### Cross-reference

International standard  
ISO-565-1972

Corresponding British Standard  
BS 410 : 1976  
Specification for test sieves  
(Related)

**Additional information.** In order to clarify the text, the following information is given.

With reference to 4.2, the automatic device specified is commonly called a 'mechanical sieve shaker'.

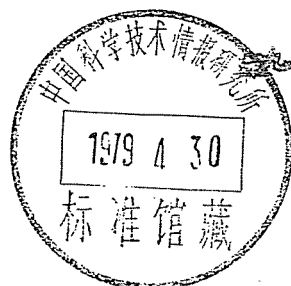
With reference to 5.1, the spinning cone device mentioned in the note is commonly called a 'rotational sample divider'.

With reference to 5.2, the earthing of the sieves referred to in the third paragraph is an inherent design feature of commercially available automatic devices.

If the total of the masses of the sieved fractions differs from the mass of the test portions by more than 0.1 g, the test should be repeated until acceptable agreement is attained.

When ISO 3118 is reviewed it is intended to suggest that these clarifications be incorporated in its text.

2002年6月 2日



四十年三十日

2006年7月 4日



## 1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for the determination of the particle size distribution by mechanical sieving of sodium perborates for industrial use.

## 2 REFERENCE

ISO 565, *Test sieves — Woven wire cloth and perforated plate — Nominal sizes of apertures.*

## 3 PRINCIPLE

Mechanical sieving of a test portion under specified conditions. Weighing of each of the fractions.

## 4 APPARATUS

Ordinary laboratory apparatus and

**4.1 Series of circular sieves** (see ISO 565), with metallic mountings, approximately 200 mm diameter, capable of being fitted tightly together and including a base and a cover. The sieves shall be chosen by agreement between the interested parties.

**4.2 Automatic device**, capable of applying to a set of four sieves, base and cover fitted, combined movements in the horizontal plane and impacts along the vertical axis.

The movement of the horizontal plane is defined as follows (see figure) : the centre of the sieves shall follow the same movement as the mid-point C of a straight line AB of length 380 mm. One extremity A of this line describes a circle, of radius  $r = 20$  mm, in a horizontal plane. The other extremity B is constrained to describe a straight line, of length  $2r = 40$  mm, lying on the line passing through the centre O of the circle.

The complete movement shall be repeated about 300 times per minute.

The vertical impacts are produced by a weight of about 1,2 kg falling from a height of 40 mm on a rubber pad fixed on a plate on the cover.

The frequency of impacts shall be about 150 impacts per minute, and these shall not give rise to a vertical displacement of the sieves of greater than 0,5 mm.

NOTE — A device conforming to these specifications is commercially available and information on suppliers may be obtained from national standards organizations.

## 5 PROCEDURE

### 5.1 Test portion

Weigh, to the nearest 0,01 g, 45 to 55 g of the laboratory sample.

NOTE — If the sample needs to be divided, this should be carried out by an appropriate device which will ensure a representative sample, particularly with respect to particle size distribution, for example a spinning cone device.

### 5.2 Determination

Fit the sieves (4.1), cleaned and dried, one within the other in decreasing order of aperture size, and add the base. Place the sieve with the smallest aperture at the bottom, on the base. Place the sieve with the largest aperture at the top.

Transfer quantitatively the test portion (5.1) to the topmost sieve and close the sieve with the cover.

Fix the set of sieves on to the automatic device (4.2) and connect to earth by a conductor. Sieve for 5 min, or such a time as may be agreed between the interested parties, and then weigh the contents of each sieve to the nearest 0,01 g.

The total of the masses obtained should be equal, to within  $\pm 0,1$  g, to the mass of the test portion (5.1).

## 6 EXPRESSION OF RESULTS

Calculate

- a) the percentage by mass of the test portion which is retained on each sieve;
- b) the percentage by mass of the test portion which passes through the sieve with the smallest aperture.

## 7 TEST REPORT

The test report shall include the following particulars :

- a) the reference of the method used;
- b) the results and the method of expression used;
- c) any unusual features noted during the determination;
- d) any operation not included in this International Standard, or regarded as optional.