

International Standard



5937

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Sodium perborates for industrial use — Determination of degree of attrition

Perborates de sodium à usage industriel — Détermination de l'indice d'usure

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5937 was developed by Technical Committee ISO/TC 47, *Chemistry*, and was circulated to the member bodies in November 1978.

It has been approved by the member bodies of the following countries :

Australia	Germany, F. R.	South Africa, Rep. of
Austria	Hungary	Switzerland
Belgium	India	Thailand
Bulgaria	Israel	Turkey
Chile	Italy	United Kingdom
China	Korea, Rep. of	USSR
Czechoslovakia	Mexico	Yugoslavia
Egypt, Arab Rep. of	Netherlands	
France	Romania	

No member body expressed disapproval of the document.

This International Standard has also been approved by the International Union of Pure and Applied Chemistry (IUPAC).

Sodium perborates for industrial use — Determination of degree of attrition

1 Scope and field of application

This International Standard specifies a method for measuring the breakdown by attrition of coarse granular sodium perborates for industrial use.

2 References

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

ISO 607, *Surface active agents and detergents — Methods of sample division.*

3 Principle

Breakdown of a sample by a high velocity jet of air in a small fluidized bed. Calculation of the amount of breakdown (attrition) from the change in particle size distribution of the test portion before and after fluidization. Expression of the degree of attrition as the increase in the percentage of material which passes through a screen of aperture size 150 μm .

4 Apparatus

4.1 Sample divider, as specified in ISO 607, preferably, of the conical type.

4.2 Automatic shaking device, capable of applying to the test sieve assembly (4.3) with the receiver, and cover plate fitted, combined movements in the horizontal plane and impacts along the vertical axis.

The movement in the horizontal plane is defined as follows (see figure 1) : 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 mass of about 1,2 kg falling from a height of 40 mm onto 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 500 μm .

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

4.3 Test sieve assembly, comprising sieves of 200 mm diameter and mesh aperture sizes 500 μm and 150 μm , complying with the requirements of ISO 565, and fitted with a cover plate and a receiver.

4.4 Attrition apparatus, connected via a pressure regulator to a cylinder of compressed air, comprising a 25 mm (nominal) diameter glass tube not less than 600 mm in length, with associated gaskets and flanges, capable of accommodating a securely-fitting dust collector (an inverted paper thimble of the Soxhlet type is suitable) in the top. Figure 2 illustrates the apparatus set up for measuring the flow rate of air through the apparatus, the flowmeter (4.6) being fitted, as shown, in place of the dust collector.

4.5 Brass orifice plate, 90 mm diameter and 3 mm thick, with a hole of diameter 0,4 mm drilled centrally. The plate shall be drilled to match the flanges.

4.6 Flow meter, graduated in litres per minute. A floating indicator instrument is suitable.