

Methods of

# Test for sodium fluoride for industrial use —

Part 1: Determination of  
water-insoluble matter

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## Co-operating organizations

The Chemicals Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

British Steel Industry\*  
 Chemical Industries Association\*  
 Department of Health and Social Security  
 Department of Trade and Industry\*  
 Department of Trade and Industry — Laboratory of the Government Chemist\*  
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The 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:

Aluminium Federation  
 British Ceramic Research Association  
 Royal Institute of Chemistry  
 Society for Analytical Chemistry  
 Society of Chemical Industry

This British Standard, having been approved by the Chemicals Industry Standards Committee, was published under the authority of the Executive Board on 31 July 1974

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The following BSI references relate to the work on this standard:  
 Committee reference CIC/24  
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# Foreword

This British Standard has been prepared under the authority of the Chemicals Industry Standards Committee in order to provide methods for the analysis of sodium fluoride.

In the drafting of this standard, account has been taken of the method adopted by the International Organization for Standardization (ISO), in the preparation of which the United Kingdom has been an active participant. It is intended to provide further methods, in the form of parts of this standard, as the work of ISO/TC 47 and, in particular, ISO/TC 47/SC 7 — Alumina and related compounds, advances.

This Part is based on International Standard ISO 2831, “*Sodium fluoride for industrial use. Determination of water-insoluble matter*”, modified to take into account the comments made by the United Kingdom during its development.

*This standard prescribes methods of test only, and should not be used or quoted as a specification defining limits of purity. Reference to the standard should be in a form of words indicating that the methods of test used conform to BS 5072-1.*

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## Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 and 2, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

## 1 Scope

This Part of this British Standard specifies a method for the determination of water-insoluble matter in sodium fluoride for industrial use.

NOTE The titles of the British Standards referred to in this standard are listed on the inside back cover.

## 2 Principle

A test portion is dissolved in water, any insoluble matter is separated by filtration and is then dried and weighed.

## 3 Reagents

Water complying with the requirements of BS 3978, or water of equivalent purity, shall be used throughout the test.

## 4 Apparatus

Ordinary laboratory apparatus and the following items are required.

**4.1 Filter crucible.** Having a sintered glass filter plate of porosity P40 (pore size index between 10  $\mu\text{m}$  and 40  $\mu\text{m}$ ) (see BS 1752).

**4.2 Electric oven.** Ventilated by convection and capable of being controlled at  $110 \pm 2$  °C (see BS 2648).

## 5 Procedure

**5.1 Test portion.** Weigh, to the nearest 0.01 g, approximately 5 g of the dried sample<sup>1)</sup>.

**5.2 Determination.** Place the test portion in a beaker of suitable capacity (for example, 400 ml) and dissolve it in approximately 200 ml of water. Heat the solution to boiling for about 10 min, cool and immediately filter the solution by vacuum through the filter crucible (see 4.1), previously dried for 2 h in the oven (see 4.2), controlled at  $110 \pm 2$  °C, cooled in a desiccator and weighed.

Wash the residue in the crucible four times, each time with 50 ml of water at approximately 80 °C.

Place the filter crucible in the electric oven (see 4.2), controlled at  $110 \pm 2$  °C, and maintain at this temperature for 2 h.

Remove the crucible from the oven, place it in a desiccator, allow to cool and weigh. Repeat the operations of heating, cooling and weighing until the difference between two successive weighings does not exceed 1 mg.

NOTE The time of cooling in the desiccator should be equal to that used to determine the tare of the empty crucible.

## 6 Expression of results

The water-insoluble matter is given, as a percentage by mass, by the formula:

$$\frac{(m_2 - m_1)}{m_0} \times 100$$

where

$m_0$  is the mass of the test portion (g);

$m_1$  is the mass of the empty crucible (g);

$m_2$  is the mass of the crucible containing the filtered and dried insoluble matter (g).

<sup>1)</sup> Methods for the preparation and storage of test samples of sodium fluoride are in course of preparation and will be published as a part of this standard.



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## Publications referred to

This standard makes reference to the following British Standards:

BS 1752, *Laboratory sintered or fritted filters.*

BS 2648, *Performance requirements for electrically-heated laboratory drying ovens.*

BS 3978, *Water for laboratory use.*

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