

1996年07月20日 1981年10月

British Standard Methods of

Sampling and test for sodium hydroxide for industrial use

Part 7. Determination of chloride content (photometric method)

[ISO title: Sodium hydroxide for industrial use — Determination of chlorides content — Photometric method]

2004年6月14日

Méthodes d'échantillonnage et d'essai du hydroxyde de sodium à usage industriel
Partie 7. Dosage des chlorures (méthode photométrique)

2007年6月28日

99年7月20日

2001年9月28日

Probenahme- und Prüfmethode für Natriumhydroxyd für industrielle Anwendung
Teil 7. Bestimmung des Chloridgehalts (photometrische Methode)

NOTE. It is recommended that this Part be read in conjunction with the information in the 'General introduction' published separately as BS 6075 : Part 0.

National foreword

This Part of BS 6075 is identical with ISO 3197 'Sodium hydroxide for industrial use — Determination of chlorides content — Photometric method', published in 1975 by the International Organization for Standardization (ISO).

The national appendix to this Part of this standard describes a procedure to remove mercury from waste solutions from the analytical procedures described herein. This procedure is technically equivalent to that described in ISO 5790 'Inorganic chemical products for industrial use — General method for determination of chloride content — Mercurimetric method' (which has not been implemented as a British Standard).

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

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

Cross-references

International standard	Corresponding British Standard
ISO 981-1973	BS 6075 Methods of sampling and test for sodium hydroxide for industrial use Part 2 : 1981 Determination of chloride content (mercurimetric method) (Identical)

International standard

ISO 3195-1975

Corresponding British Standard

Part 5 : 1981 Sampling and preparation of main test solution (Identical)

Additional information

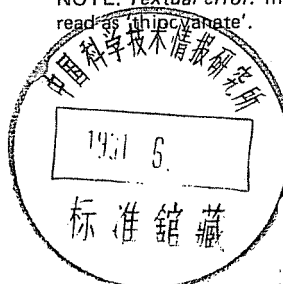
Water. Water complying with the requirements of clause 5 is specified in BS 3978 'Water for laboratory use'.

Nitric acid, ρ approximately 1.42 g/ml, about 70 % (m/m) solution, which is the corresponding reagent available in the UK, is suitable for use in place of the solution specified in 5.2.

Test portion. For some grades of sodium hydroxide it may be necessary to adjust the mass of the test portion (see 7.1) to ensure that the amount of chloride present in the test solution complies with the requirements for the test method. In BS 4130 'Sodium hydroxide (technical grades)', details of a suitable mass for the grades specified are given.

WARNING. Mercury (II) thiocyanate, specified in 5.3, is toxic (with danger of cumulative effects) and is irritant, particularly in the form of dust. Avoid breathing dust. Avoid contact with skin and eyes. Avoid pollution of waste water with mercury from waste solutions using, for example, the procedure for removal of mercury described in the national appendix to this Part of this standard.

NOTE. *Textual error.* In the heading to 5.3 'thiocyanate' should be read as 'thiocyanate'.



2006年7月4日

2005年7月13日

British Standards Institution



050920014624

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a photometric method for the determination of the chlorides content of sodium hydroxide for industrial use.

The method is applicable to products having chloride contents, expressed as chlorine (Cl), between 2 mg/kg and 50 mg/kg.

NOTE — For contents exceeding 50 mg/kg, use the method specified in ISO 981, *Sodium hydroxide for industrial use — Determination of chlorides content — Mercurimetric method*, or reduce the volume of the test solution according to the note in 7.4.3.

2 REFERENCE

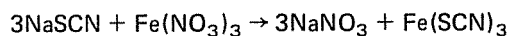
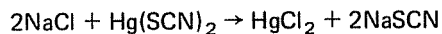
ISO 3195, *Sodium hydroxide for industrial use — Sampling — Test sample — Preparation of the main solution for carrying out certain determinations*.

3 PRINCIPLE

Quantitative displacement of the thiocyanate (SCN⁻) ions of the mercury(II) thiocyanate by the chloride (Cl⁻) ions contained in the test portion. Reaction of the SCN⁻ ions with iron(III) nitrate to form iron(III) thiocyanate (red).

Photometric measurement of the colour at a wavelength of about 450 nm.

4 REACTIONS



5 REAGENTS

The preparation and storage of the reagents, as well as the sampling and determination, shall take place in an atmosphere free from chlorine and hydrochloric acid. During the analysis, use only reagents of recognized analytical reagent grade and only double-distilled water, or water of equivalent purity.

5.1 Nitric acid, ρ approximately 1,40 g/ml, about 68 % (m/m) solution or approximately 14 N solution, having a chlorides content, expressed as chlorine (Cl), not exceeding 0,5 mg/kg.

5.2 Iron(III) nitrate solution corresponding to 8 g of Fe per litre.

Pour 80 ml of water into a 500 ml conical flask, and add 4,0 g of pure (99,5 % minimum) iron wire. Cautiously add 80 ml of the nitric acid solution (5.1). Heat gradually and then boil in a ventilated fume cupboard until the reaction is complete and nitrous fumes have been completely eliminated. Decolorize the solution by adding a few drops of hydrogen peroxide solution (30 % m/m) and boil again for a few minutes. After cooling, transfer quantitatively to a 500 ml one-mark volumetric flask, dilute to the mark and mix.

5.3 Mercury(II) thiocyanate, 0,5 g/l solution.

Weigh, to the nearest 0,001 g, 0,100 g of mercury(II) thiocyanate [Hg(SCN)₂] and dissolve in 180 ml of water at 50 °C, while stirring.

Filter, dilute to the mark in a 200 ml one-mark volumetric flask and mix.

Prepare this solution at the time of use.

5.4 Sodium chloride, standard solution corresponding to 0,100 g of Cl per litre.

Weigh, to the nearest 0,001 g, 0,165 g of sodium chloride, previously dried at 500 °C for 1 h and cooled in a desiccator, dissolve in water, dilute to the mark in a 1 000 ml one-mark volumetric flask and mix.

1 ml of this standard solution contains 0,1 mg of Cl.

5.5 Sodium chloride, standard solution corresponding to 10 mg of Cl per litre.

Take 20,0 ml of the standard sodium chloride solution (5.4), dilute to the mark in a 200 ml one-mark volumetric flask and mix.

1 ml of this standard solution contains 0,01 mg of Cl.

Prepare this solution at the time of use.