

Chemicals used for treatment of water intended for human consumption — Sodium hydrogen sulfite

The European Standard EN 12120:2005 has the status of a
British Standard

ICS 71.100.80

National foreword

This British Standard is the official English language version of EN 12120:2005. It supersedes BS EN 12120:1999 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee CII/59, Chemicals for drinking water treatment, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

The United Kingdom, as a member of CEN, is obliged to publish EN 12120 as a British Standard. However, attention is drawn to the fact that the United Kingdom voted against the approval of EN 12120. The main reasons for this disapproval were as follows.

- a) In the opinion of the UK committee, the limit on the sum of the contents of sodium sulfate and sodium chloride, quoted in 4.3, is unnecessary.
- b) Insufficient details have been provided in order to determine the sodium hydrogen sulfite content by adapting the methods described in ISO 418, which are for a solid product rather than a liquid product.
- c) No information has been provided on the preparation of test solutions or the calculation of results for the determinations of sulfate and chloride, in order to apply the methods referred to in 5.2.3 which are intended for the analysis of water.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 20, an inside back cover and a back cover.

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Amendments issued since publication

Amd. No.	Date	Comments

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 28 April 2006

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ISBN 0 580 47483 6

English version

Chemicals used for treatment of water intended for human consumption - Sodium hydrogen sulfite

Produits chimiques utilisés pour le traitement de l'eau destinée à la consommation humaine - Hydrogénosulphite de sodium

Produkt zur Aufbereitung von Wasser den menschlichen Gebrauch - Natriumhydrogensulfit

This European Standard was approved by CEN on 12 May 2005.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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Foreword

This European Standard (EN 12120:2005) has been prepared by Technical Committee CEN/TC 164 "Water supply", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2005, and conflicting national standards shall be withdrawn at the latest by December 2005.

This document supersedes EN 12120:1998.

Significant technical differences between this edition and EN 12120:1998 are as follows:

- deletion of the reference to EU Directive 80/778/EEC of July, 15 1980 in order to take into account the latest Directive in force (see [1]).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by this European Standard:

- a) this European Standard provides no information as to whether the product may be used without restriction in any of the Member States of the EU or EFTA;
- b) it should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

NOTE Conformity with this European Standard does not confer or imply acceptance or approval of the product in any of the Member States of the EU or EFTA. The use of the product covered by this European Standard is subject to regulation or control by National Authorities.

1 Scope

This European Standard is applicable to sodium hydrogen sulfite used for treatment of water intended for human consumption. It describes the characteristics of sodium hydrogen sulfite and specifies the requirements and the corresponding test methods for sodium hydrogen sulfite. It gives information on its use in water treatment.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 3696, *Water for analytical laboratory use - Specification and test methods (ISO 3696:1987)*

ISO 418, *Photography - Processing chemicals - Specifications for anhydrous sodium sulfite*

ISO 3165, *Sampling of chemical products for industrial use - Safety in sampling*

ISO 5993, *Sodium hydroxide for industrial use - Determination of mercury content - Flameless atomic absorption spectrometric method*

ISO 6206, *Chemical products for industrial use - Sampling – Vocabulary*

ISO 6353-1, *Reagents for chemical analysis - Part 1: General test methods*

ISO 9297, *Water quality - Determination of chloride - Silver nitrate titration with chromate indicator (Mohr's method)*

ISO 22743 (in preparation) *Water quality -- Determination of sulfates by continuous flow analysis (CFA)*

3 Description

3.1 Identification

3.1.1 Chemical name

Sodium hydrogen sulfite.

3.1.2 Synonym or commons name

Sodium bisulfite

3.1.3 Relative molecular mass

104,6

3.1.4 Empirical formula

NaHSO₃.

3.1.5 Chemical formula

NaHSO₃.

3.1.6 CAS-Registry Number¹⁾

7631-90-5

3.1.7 EINECS reference²⁾

231-548-4.

3.2 Commercial form

The product is an aqueous solution with an usual concentration approximately of mass fraction of 40 % NaHSO₃ corresponding to 520 g NaHSO₃ per litre.

3.3 Physical properties

3.3.1 Appearance and odour

The product is a yellowish liquid with a slight odour of sulfur dioxide.

3.3.2 Density

The density of the product is 1,3 g/ml to 1,5 g/ml at 20 °C.

3.3.3 Solubility (in water)

The product is miscible with water.

3.3.4 Vapour pressure

The vapour pressure of a solution of mass fraction of 40 % NaHSO₃ is 4 kPa ³⁾ at 20 °C.

3.3.5 Boiling point at 100 kPa³

The product decomposes at 100 °C.

3.3.6 Crystallisation point

A solution of mass fraction of 40 % NaHSO₃ crystallizes at 2 °C.

3.3.7 Specific heat

The specific heat of the product is 3,15 kJ/kg.K .

3.3.8 Viscosity dynamic

The viscosity of a solution of mass fraction of 40% NaHSO₃ is 4 mPa.s at 25 °C.

3.3.9 Critical temperature

Not applicable.

¹⁾ Chemical Abstracts Service Registry Number.

²⁾ European Inventory of Existing Commercial Chemical Substances.

³⁾ 100 kPa = 1 bar.