SLOVENSKI STANDARD
oSIST prEN 12120:2020

01-julij-2020

Kemikalije, ki se uporabljajo za pripravo pitne vode - Natrijev hidrogen sulfit

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

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Natriumhydrogensulfit

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

Ta slovenski standard je istoveten z: **prEN 12120**

ICS:

13.060.20	Pitna voda	Drinking water
71.100.80	Kemikalije za čiščenje vode	Chemicals for purification of water

oSIST prEN 12120:2020 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 12120

May 2020

ICS 71.100.80

Will supersede EN 12120:2012

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 - Hydrogénosulfite de sodium

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Natriumhydrogensulfit

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 164.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. prEN 12120:2020 E

Contents

Page

European foreword

This document (prEN 12120:2020) has been prepared by Technical Committee CEN/TC 164 “Water supply”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 12120:2012.

In comparison with the previous edition, the following technical modifications have been made:

a) modification of 7.3 on transportation regulations and labelling, adding the sentence “The user shall be aware of the incompatibilities between transported products.”;

b) modification of 7.4 on marking. The requirements of marking are also applied to the accompanying documents;

c) use of the changed classification and labelling (see [4]).

Introduction

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

a) this dcoument 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 a verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

NOTE Conformity with this document 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 document is subject to regulation or control by National Authorities.

1 Scope

This document 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 documents are referred to in the text in such a way that some or all of their content constitutes requirements 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)*

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

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

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, *Water quality — Determination of sulfates — Method by continuous flow analysis (CFA)*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Description

4.1 Identification

4.1.1 Chemical name

Sodium hydrogen sulfite.

4.1.2 Synonym or commons name

Sodium bisulfite.

4.1.3 Relative molecular mass

104,6.

4.1.4 Empirical formula

$NaHSO_3$.

4.1.5 Chemical formula

$NaHSO_3$.

4.1.6 CAS-Registry Number [1]

7631-90-5.

4.1.7 EINECS reference [2]

231-548-0.

4.2 Commercial form

The product is an aqueous solution with an usual concentration of approximately a mass fraction of 40 % $NaHSO_3$. This corresponds to 520 g $NaHSO_3$ per litre.

4.3 Physical properties

4.3.1 Appearance and odour

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

4.3.2 Density

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

4.3.3 Solubility (in water)

The product is miscible with water.

4.3.4 Vapour pressure

The vapour pressure of a solution of mass fraction of 40 % $NaHSO_3$ is 4 kPa [3] at 20 °C.

4.3.5 Boiling point at 100 kPa [3]

The product decomposes at 100 °C.

4.3.6 Crystallization point

A solution of mass fraction of 40 % $NaHSO_3$ crystallizes at 2 °C.

4.3.7 Specific heat

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

4.3.8 Viscosity dynamic

The viscosity of a solution of mass fraction of 40 % $NaHSO_3$ is 4 mPa.s at 25 °C.

4.3.9 Critical temperature

Not applicable.

---

[1] Chemical Abstracts Service Registry Number.
[2] European Inventory of Existing Commercial Chemical Substances.
[3] 100 kPa = 1 bar.

4.3.10 Critical pressure

Not applicable.

4.3.11 Physical hardness

Not applicable.

4.4 Chemical properties

The solution is weakly acid. The pH value of a commercial solution of mass fraction of 40 % is between 4,5 and 5,0.

$NaHSO_3$ exists in solution only; if the solution is evaporated the salt which is formed is sodium disulfite.

At elevated temperatures (>100 °C) sulfur dioxide is generated.

Sodium hydrogen sulfite reacts violently with oxidising agents; e.g. with sodium hypochlorite or hydrogen peroxide.

5 Purity criteria

5.1 General

This document specifies the minimum purity requirements for sodium hydrogen sulfite used for the treatment of water intended for human consumption. Limits are given for impurities commonly present in the product. Depending on the raw material and the manufacturing process other impurities could be present and, if so, this shall be notified to the user and when necessary to relevant authorities.

Users of this product should check the national regulations in order to clarify whether it is of appropriate purity for treatment of water intended for human consumption, taking into account raw water quality, required dosage, contents of other impurities and additives used in the products not stated in this product standard.

Limits have been given for impurities and chemical parameters where these are likely to be present in significant quantities from the current production process and raw materials. If the production process or raw materials leads to significant quantities of impurities, by-products or additives being present, this shall be notified to the user.

5.2 Composition of commercial product

The commercial product has a concentration of $NaHSO_3$ of approximately 520 g/l, which relates to a content of mass fraction of 40 % $NaHSO_3$, corresponding to a mass fraction of 25 % SO_2.

The concentration of sodium hydrogen sulfite shall be within ± 5 % of the manufacturer's declared value.

5.3 Impurities and main by-products

The sum of the content of sodium sulfate and sodium chloride shall not exceed a mass fraction of 5 % of the commercial product, i.e. solution of mass fraction of 40 % $NaHSO_3$.

5.4 Chemical parameters

The product shall conform to the requirements specified in Table 1.

Table 1 — Chemical parameters

Parameter		Limit mg/kg of commercial product (mass fraction of 40 % $NaHSO_3$)
Antimony (Sb)	max	1
Arsenic (As)	max	1
Cadmium (Cd)	max	1
Chromium (Cr)	max	1
Lead (Pb)	max	5
Mercury (Hg)	max	1
Nickel (Ni)	max	1
Selenium (Se)	max	1
NOTE Other chemical parameters and indicator parameters are not relevant in sodium hydrogen sulfite because the raw materials used in the manufacturing process are free of them. For parametric values of sodium hydrogen sulfite on trace metal content in drinking water, see [3].		

6 Test methods

6.1 Sampling

6.1.1 General

Observe the general recommendations of ISO 3165 and take account of ISO 6206.

6.1.2 Sampling from drums and bottles

6.1.2.1 General

6.1.2.1.1 Mix the contents of each container to be sampled by shaking the container, by rolling it or by rocking it from side to side, taking care not to damage the container or spill any of the liquid.

6.1.2.1.2 If the design of the container is such (for example, a narrow-necked bottle) that it is impracticable to use a sampling implement, take a sample by pouring after the contents have been thoroughly mixed. Otherwise, proceed as described in 6.1.2.1.3.

6.1.2.1.3 Examine the surface of the liquid. If there are signs of surface contamination, take samples from the surface as described in 6.1.2.2. Otherwise, take samples as described in 6.1.2.3.

6.1.2.2 Surface sampling

Take a sample using a suitable ladle. Lower the ladle into the liquid until the rim is just below the surface, so that the surface layer runs into it. Withdraw the ladle just before it fills completely and allow any liquid adhering to the ladle to drain off. If necessary, repeat this operation so that, when the other selected containers have been sampled in a similar manner, the total volume of sample required for subsequent analysis is obtained.