



SLOVENSKI STANDARD
SIST EN 12125:2000
01-november-2000

Kemikalije, ki se uporabljajo za pripravo pitne vode - Natrijev tiosulfat

Chemicals used for treatment of water intended for human consumption - Sodium thiosulfate

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Natriumthiosulfat

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

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ICS:

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

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EUROPEAN STANDARD
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EN 12125

September 1998

ICS 71.060.50; 71.100.80

Descriptors: potable water, water treatment, chemical compounds, sodium thiosulfate, description, physical properties, chemical properties, impurities, toxic substances, tests, conditioning, marking, storage, labelling

English version

Chemicals used for treatment of water intended for human
consumption - Sodium thiosulfate

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

Produkte zur Aufbereitung von Wasser für den
menschlichen Gebrauch - Natriumthiosulfat

This European Standard was approved by CEN on 5 September 1998.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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Foreword

This European Standard 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 March 1999, and conflicting national standards shall be withdrawn at the latest by March 1999.

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

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Introduction

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

- 1) this 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 ;
- 2) 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.

1 Scope

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

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN ISO 3696	Water for analytical laboratory use - Specification and test methods (ISO 3696:1987)
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 8213	Chemical products for industrial use - Sampling techniques - Solid chemical products in the form of particles varying from powders to coarse lumps
ISO 9280	Water quality - Determination of sulfate - Gravimetric method using barium chloride
ISO 10636	Photography - Processing chemicals - Specifications for anhydrous sodium thiosulfate and sodium thiosulfate pentahydrate

3 Description

3.1 Identification

3.1.1 Chemical name

Sodium thiosulfate.

3.1.2 Synonym or common names

Sodium thiosulfate, sodium hyposulfite.

3.1.3 Relative molecular mass

158,11 (anhydrous).

3.1.4 Empirical formula

$\text{Na}_2\text{S}_2\text{O}_3$.

3.1.5 Chemical formula

$\text{Na}_2\text{S}_2\text{O}_3$.

3.1.6 CAS-Registry Number¹⁾

7772-98-7 (anhydrous); 10102-17-7 (pentahydrate).

3.1.7 EINECS reference²⁾

231-867-5.

3.2 Commercial form

The product is a crystalline powder.

3.3 Physical properties

3.3.1 Appearance

The hydrated product is colourless crystal. The anhydrous product is a white powder.

1) Chemical Abstracts Service Registry Number.

2) European Inventory of Existing Commercial Chemical Substances.

3.3.2 Density

The particle density of the hydrated product is 1,69 g/cm³ to 1,73 g/cm³ at 20 °C.

3.3.3 Solubility

The solubility of the product in water is 700 g/l at 20 °C (anhydrous) ; for pentahydrate : 2910 g/l at 45 °C.

3.3.4 Vapour pressure

Not applicable.

3.3.5 Boiling point at 100 kPa³⁾

Not applicable.

3.3.6 Crystallisation point

The product starts to decompose at 45 °C to 50 °C.

3.3.7 Specific heat

Not known.

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3.3.8 Viscosity, dynamic

Not applicable.

3.3.9 Critical temperature

Not applicable.

3.3.10 Critical pressure

Not applicable.

3.3.11 Physical hardness

Not applicable.

³⁾ 100 kPa = 1 bar.

3.4 Chemical properties

The pH value of a diluted aqueous solution of sodium thiosulfate is approximately neutral (6,5 to 8). Sodium thiosulfate dissolves silver halogenids and other silver salts.

At elevated temperatures (> 50 °C) sulfur dioxide is generated.

Sodium thiosulfate releases sulfur dioxide when mixed with acids.

Sodium thiosulfate reacts violently with oxidizing agents; e.g. with sodium hypochlorite or hydrogen peroxide. It shall not get into contact with acids, iodine, lead and silver salts.

4 Purity criteria

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

4.1 Composition of commercial product

The concentration of sodium thiosulfate anhydrous shall not be less than 95 % (m/m) $\text{Na}_2\text{S}_2\text{O}_3$.
The concentration of sodium thiosulfate pentahydrate shall not be less than 95% (m/m) $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5 \text{H}_2\text{O}$.

4.2 Impurities and main by-products

The content of sodium sulfate shall not exceed 5 % (m/m).

4.3 Toxic substances

NOTE : For the purpose of this standard, "toxic substances" are those defined in the EU Directive 80/778/EEC of 15 July 1980 (see B.1).

The content of toxic substances shall conform to the requirements specified in table 1.