

SLOVENSKI STANDARD

SIST EN 12125:2013

01-april-2013

Nadomešča:
SIST EN 12125:2005

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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Ta slovenski standard je istoveten z: EN 12125:2012

ICS:

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

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en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12125

November 2012

ICS 71.100.80

Supersedes EN 12125:2005

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 23 September 2012.

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 CEN-CENELEC Management Centre 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 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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Foreword

This document (EN 12125:2012) 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 May 2013, and conflicting national standards shall be withdrawn at the latest by May 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12125:2005.

The significant technical differences between this edition and EN 12125:2005 are as follows:

- Modification of 6.2 on labelling, deletion of the reference to EU Directive 80/778/EEC of 15 July 1980 in order to take account of the latest Directive in force.

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

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1 Scope

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

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 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 10636, *Photography — Processing chemicals — Specifications for anhydrous sodium thiosulfate and sodium thiosulfate pentahydrate*

ISO 22743, *Water quality — Determination of sulfates — Method by continuous flow analysis (CFA)*

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

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

EN 12125:2012 (E)**3.1.5 Chemical formula**

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

3.1.6 CAS-Registry Number ¹⁾

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

3.1.7 EINECS reference ²⁾

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.

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 in water

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 kPa ³⁾

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.

1) Chemical Abstracts Service Registry Number.

2) European Inventory of Existing Commercial Chemical Substances.

3) 100 kPa = 1 bar.

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.

3.4 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 ($> 50\text{ }^{\circ}\text{C}$), sulfur dioxide is generated.

Sodium thiosulfate releases sulfur dioxide when mixed with acids.

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

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4 Purity criteria**4.1 General**

This European Standard specifies the minimum purity requirements for sodium thiosulfate 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 may 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 product 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.

4.2 Composition of commercial product

The concentration of sodium thiosulfate anhydrous shall not be less than a mass fraction of 95 % of $\text{Na}_2\text{S}_2\text{O}_3$.

The concentration of sodium thiosulfate pentahydrate shall not be less than a mass fraction of 95% of $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$.