SLOVENSKI STANDARD
SIST EN 16399:2014

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

Chemicals used for treatment of swimming pool water - Sodium thiosulfate

Produkte zur Aufbereitung von Schwimm-und Badebeckenwasser - Natriumthiosulfat

Produits chimiques utilisés pour le traitement de l'eau des piscines - Thiosulfate de sodium

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English Version

Chemicals used for treatment of swimming pool water - Sodium thiosulfate

Produits chimiques utilisés pour le traitement de l'eau des piscines - Thiosulfate de sodium

Produkte zur Aufbereitung von Schwimm-und Badebeckenwasser - Natriumthiosulfat

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

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Contents

Page

Foreword

This document (EN 16399:2013) 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of an identical text or by endorsement, at the latest by June 2014, and conflicting national standards shall be withdrawn at the latest by June 2014.

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Introduction

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

1) 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;

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.

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 only to sodium thiosulfate and not to mixtures with other chemicals used for treatment of swimming pool water. 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 in swimming water treatment. It also determines the rules relating to safe handling and use (see Annex A).

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 12125, *Chemicals used for treatment of water intended for human consumption — Sodium thiosulfate*

3 Description

3.1 Identification

3.1.1 Chemical name

Sodium thiosulfate.

3.1.2 Synonym or commons names

Sodium thiosulfate, sodium hyposulfite.

3.1.3 Relative molecular mass

158,11 (anhydrous).

3.1.4 Empirical formula

$Na_2S_2O_3$.

3.1.5 Chemical formula

$Na_2S_2O_3$.

3.1.6 CAS[1)] Registry Number

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

3.1.7 EINECS[2)] reference

231-867-5.

1) CAS : Chemical Abstracts Service.

2) EINECS : European INventory of Existing Commercial Chemical Substances.

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/cm^3 to 1,73 g/cm^3 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 Melting point

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

3.3.7 Specific heat

Not known.

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 oxidising 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

4.1 General

This European Standard specifies the minimum purity requirements for sodium thiosulfate used for the treatment of water for swimming pools. 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 for swimming pools, 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 toxic substances 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 $Na_2S_2O_3$.

The concentration of sodium thiosulfate pentahydrate shall not be less than a mass fraction of 95 % of $Na_2S_2O_3 \cdot 5H_2O$.

4.3 Chemical parameters

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