

SVENSK STANDARD

SS-EN 15028:2012



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Processkemikalier för beredning av dricksvatten – Natriumklorat

Chemicals used for treatment of water intended for human consumption – Sodium chlorate

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Denna standard ersätter SS-EN 15028:2006, utgåva 1.

The European Standard EN 15028:2012 has the status of a Swedish Standard. This document contains the official version of EN 15028:2012.

This standard supersedes the Swedish Standard SS-EN 15028:2006, edition 1.

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Denna standard är framtagen av kommittén för Vattenreningskemikalier och industrikalk, SIS/TK 431.

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EUROPEAN STANDARD

EN 15028

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2012

ICS 71.100.80

Supersedes EN 15028:2006

English Version

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

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

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Natriumchlorat

This European Standard was approved by CEN on 16 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.

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Foreword

This document (EN 15028:2012) 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of an identical text or by endorsement, at the latest by May 2013, and conflicting national standards shall be withdrawn at the latest by May 2013.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 15028:2006.

Significant technical differences between this edition and EN 15028:2006 are as follows:

- a) 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.

SS-EN 15028:2012 (E)

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 chlorate used for treatment of water intended for human consumption. It describes the characteristics of sodium chlorate and specifies the requirements and the corresponding test methods for sodium chlorate. It gives information on its use in water treatment. It also determines the rules relating to safe handling and use of sodium chlorate (see Annex B) and gives the environmental, health and safety precautions within chemical laboratory (see Annex C).

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)*

EN ISO 11885, *Water quality — Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES) (ISO 11885)*

EN ISO 12846, *Water quality — Determination of mercury — Method using atomic absorption spectrometry (AAS) with and without enrichment (ISO 12846)*

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

ISO 6206, *Chemical products for industrial use — Sampling — Vocabulary*

ISO 8213, *Chemical products for industrial use — Sampling techniques — Solid chemical products in the form of particles varying from powders to coarse lumps*

3 Description

3.1 Identification

3.1.1 Chemical name

Sodium chlorate

3.1.2 Synonym or common names

None (for the processes related to treatment of drinking water)

NOTE Commercial names of formulations might exist. Purity needs to be checked in case of use for treatment of water.

3.1.3 Relative molecular mass

106,45

3.1.4 Empirical formula

NaClO₃

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3.1.5 Chemical formula

NaClO₃

3.1.6 CAS Registry Number ¹⁾

7775-09-9

3.1.7 EINECS reference ²⁾

231-887-4

3.2 Commercial form

Sodium chlorate is commercially available in crystalline form or as a powder and as an aqueous solution.

3.3 Physical properties

3.3.1 Appearance and odour

The product is a colourless solid as a powder or the product is a faint blue to colourless solution.

3.3.2 Density

The density of an aqueous solution of sodium chlorate is given in Table 1.

Table 1 — Density of sodium chlorate solution

Concentration of aqueous solution of sodium chlorate solution (Mass fraction in %)	Density (g/ml at 20 °C)
30	1,24
40	1,33
50	1,44

3.3.3 Solubility in water

The solubility of sodium chlorate in water is given in Table 2.

Table 2 — Solubility of sodium chlorate

Temperature (°C)	Solubility (g/l)
10	650
20	700
40	780
60	880

¹⁾ Chemical Abstracts Service Registry Number.

²⁾ European Inventory of Existing Commercial Chemical Substances.

3.3.4 Vapour pressure

Not applicable (thermal decomposition occurs at ≥ 400 °C)

3.3.5 Boiling point at 100 kPa ³⁾

The boiling point of aqueous solutions of sodium chlorate is given in Table 3.

Table 3 — Boiling point at 100 kPa of aqueous solutions of sodium chlorate

Concentration of aqueous solution of sodium chlorate (g NaClO₃ /kg of saturated solution)	400	450	500	550	600	650	700
Boiling point (°C)	106	107	109	110	111	113	116

3.3.6 Crystallisation

The crystallisation point of aqueous solutions of sodium chlorate depending on concentration in water is given in Table 4.

Table 4 – Crystallisation point of sodium chlorate aqueous solutions

Concentration of aqueous solution of sodium chlorate (mass fraction in %)	Crystallisation point (°C)
40	-20
45	0
50	20
55	32
60	55

3.3.7 Melting point

The melting point (of the solid) is 248 °C; and the thermal decomposition is at ≥ 400 °C.

3.3.8 Viscosity (dynamic)

The relative viscosity of aqueous solutions of mass fraction of 40 % of sodium chlorate compared with water at the same temperature between 25 °C and 35 °C is 2,07.

3.3.9 Critical temperature in aqueous solution

Not applicable.

3.3.10 Critical pressure

Not applicable.

³⁾ 100 kPa = 1 bar.