

# SVENSK STANDARD

## SS-EN 901:2013



Fastställt/Approved: 2013-05-26  
Publicerad/Published: 2013-05-28  
Utgåva/Edition: 3  
Språk/Language: engelska/English  
ICS: 13.060.20; 71.100.80

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### **Processkemikalier för beredning av dricksvatten – Natriumhypoklorit**

### **Chemicals used for treatment of water intended for human consumption – Sodium hypochlorite**

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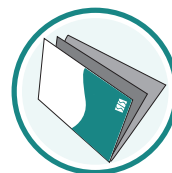
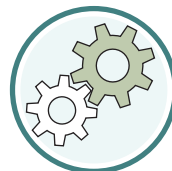
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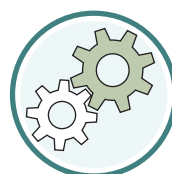
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Denna standard ersätter SS-EN 901:2007, utgåva 2.

The European Standard EN 901:2013 has the status of a Swedish Standard. This document contains the official version of EN 901:2013.

This standard supersedes the Swedish Standard SS-EN 901:2007, edition 2.

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EUROPEAN STANDARD

**EN 901**

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2013

ICS 71.100.80

Supersedes EN 901:2007

English Version

## Chemicals used for treatment of water intended for human consumption - Sodium hypochlorite

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

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Natriumhypochlorit

This European Standard was approved by CEN on 21 March 2013.

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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## SS-EN 901:2013 (E)

### Foreword

This document (EN 901:2013) 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 November 2013, and conflicting national standards shall be withdrawn at the latest by November 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 901:2007.

Significant technical differences between this edition and EN 901:2007 are as follows:

- replacement of warning and safety precautions notes by labelling according to Regulation (EC) No 1272/2008.

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.



## **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 regarding 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. Use of the product covered by this European Standard is subject to regulation or control by National Authorities.

This product is a biocide and should comply with the relevant legislation in force. In the European Union, at the time of publication, this legislation is Directive 1998/8/EC [1].

## SS-EN 901:2013 (E)

### 1 Scope

This European Standard is applicable to sodium hypochlorite used for treatment of water intended for human consumption. It describes the characteristics of sodium hypochlorite and specifies the requirements and the corresponding test methods for sodium hypochlorite. It gives information on its use in water treatment. It also determines the rules relating to safe handling and use of sodium hypochlorite (see Annex B).

NOTE While this standard is not applicable to sodium hypochlorite generated in-situ (see bibliographic reference [7]), the limits for impurities and chemical parameters apply.

### 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 1233, *Water quality — Determination of chromium — Atomic absorption spectrometric methods*

EN ISO 3696:1995, *Water for analytical laboratory use — Specification and test methods (ISO 3696:1987)*

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 8288:1986, *Water quality — Determination of cobalt, nickel, copper, zinc, cadmium and lead — Flame atomic absorption spectrometric methods*

### 3 Description

#### 3.1 Identification

##### 3.1.1 Chemical name

Sodium hypochlorite.

##### 3.1.2 Synonym or common names

Liquid bleach, soda bleach, bleach lye.

##### 3.1.3 Relative molecular mass

74,44.

##### 3.1.4 Empirical formula

NaClO.

##### 3.1.5 Chemical formula

NaClO.

### 3.1.6 CAS Registry Number <sup>1)</sup>

7681-52-9.

### 3.1.7 EINECS reference <sup>2)</sup>

231-668-3.

## 3.2 Commercial form

The product is supplied as an aqueous solution with an available (active) chlorine concentration up to a mass fraction of 18 %.

## 3.3 Physical properties

### 3.3.1 Appearance and odour

The product is a clear yellowish-green solution with a faint chlorinous odour.

### 3.3.2 Density

The density of the product varies between 1,13 g/ml and 1,30 g/ml at 20 °C.

### 3.3.3 Solubility in water

The product is capable of being mixed with water in any proportion.

### 3.3.4 Vapour pressure

Approximately 2,5 kPa at 20 °C.

### 3.3.5 Boiling point at 100 kPa <sup>3)</sup>

Not applicable.

### 3.3.6 Crystallisation and freezing point

At about – 10 °C crystallisation of NaOCl . 6 H<sub>2</sub>O starts.

Freezing of the concentrated product takes place between - 20 °C and - 30 °C.

### 3.3.7 Specific heat

The specific heat is 3,48 kJ/(kg.K) for a solution with an available active chlorine concentration of mass fraction between 14 % and 15 %.

### 3.3.8 Viscosity (dynamic)

2,6 mPa.s at 20 °C.

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1) Chemical Abstracts Service Registry Number.

2) European Inventory of Existing Commercial Chemical Substances.

3) 100 kPa = 1 bar.