



**SLOVENSKI STANDARD**  
**SIST EN 15077:2006**

**01-oktober-2006**

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**Kemikalije, ki se uporabljajo za pripravo bazenske vode - Natrijev hipoklorit**

Chemicals used for treatment of swimming pool water - Sodium hypochlorite

Produkte zur Aufbereitung von Schwimm-und Badebeckenwasser - Natriumhypochlorit

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

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**Ta slovenski standard je istoveten z: EN 15077:2006**

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**ICS:**

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71.100.80	Kemikalije za čiščenje vode	Chemicals for purification of water

**SIST EN 15077:2006**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 15077**

July 2006

ICS 71.100.80

English Version

## Chemicals used for treatment of swimming pool water - Sodium hypochlorite

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

Produkte zur Aufbereitung von Schwimm- und Badebeckenwasser - Natriumhypochlorit

This European Standard was approved by CEN on 5 June 2006.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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## Foreword

This document (EN 15077:2006) 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 January 2007, and conflicting national standards shall be withdrawn at the latest by January 2007.

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

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## Introduction

In respect of potential adverse effects on the quality of swimming pool water, 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 the 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 hypochlorite used directly, or for the production of formulations for treating swimming pool water. 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 for treating swimming pool water and determines the rules relating to safe handling and use of sodium hypochlorite (see Annex B).

## 2 Normative reference

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 901, *Chemicals used for the treatment of water intended for human consumption — Sodium hypochlorite*

## 3 Description

The identification, the commercial form, the physical properties and the chemical properties are given in the relevant sub-clauses of EN 901.

## 4 Purity criteria

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### 4.1 General

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This European Standard specifies the minimum purity requirements for sodium hypochlorite used for the treating swimming pool water. Limits are given for impurities commonly present in the product and depending on the raw material and the manufacturing process, other impurities may be present and if so, the user and when necessary, the relevant authorities shall be notified.

NOTE Users of this product should check national regulations in order to clarify whether it is of appropriate purity for treatment of water for swimming pools, taking into account water quality, required dosage, and contents of other impurities and additives used in the product not stated in the product standard.

Limits have been given for impurities and trace elements 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 lead to significant quantities of other impure by-products or additives being present, the user shall be notified.

### 4.2 Composition of commercial product

Sodium hypochlorite is available as a solution with a concentration up to 160 g of available chlorine per litre (equivalent to mass fraction of 13,5 %) at the time of delivery by the producer as calculated in accordance with the corresponding method given in EN 901. The concentration of sodium hypochlorite shall be equal to or greater than the value specified by the manufacturer.

### 4.3 Impurities and main by-products

The content of sodium chlorate ( $\text{NaClO}_3$ ) and sodium bromate ( $\text{NaBrO}_3$ ) for each type of product shall conform to the requirements specified in EN 901. The product shall be visibly free from deposits or suspended matter.

**EN 15077:2006 (E)****4.4 Chemical parameters**

The contents of arsenic, cadmium, chromium, mercury, nickel, lead, antimony and selenium for each type of product shall conform to the requirements specified in EN 901.

NOTE Cyanide (CN<sup>-</sup>) which does not exist in a strong oxidizing medium such as sodium hypochlorite, is not a relevant chemical parameter and as the raw materials used in the manufacturing process are free of pesticides and polycyclic aromatic hydrocarbons, they are not relevant.

**5 Test methods**

The methods for sampling and analysis are those specified in EN 901.

**6 Labelling - Transportation - Storage****6.1 Means of delivery**

Sodium hypochlorite shall be delivered in:

- a) containers of polyethylene or polyvinyl chloride (PVC) with external glass fibre reinforcement (GFR);
- b) steel tank wagons lined with rubber or coated with suitable plastics.

The containers shall be closed in such a manner so that no pressure can build up inside and no liquid can escape. The closure shall be protected from unintentional opening.

To ensure the purity of the product is not affected, the means of delivery shall not have been previously used for any different product or it shall have been specially cleaned and prepared before use.

**6.2 Risk and safety labelling according to the EU Directives <sup>1)</sup>**

The following labelling requirements shall apply to sodium hypochlorite at the date of the publication of this European Standard.

- Symbols and indications of danger:
  - C: Corrosive;
- Nature of special risks attributed to dangerous substances:
  - R 31: Contact with acids liberates toxic gas;
  - R 34: Causes burns.
- Safety advice concerning dangerous substances:
  - S 2: Keep out of the reach of children;
  - S 26: In case of contact with eyes, rinse immediately with water and seek medical advice.

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<sup>1)</sup> See [1].



- S 28: After contact with skin, wash immediately with plenty of water.
- S 37: Wear suitable gloves.
- S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

NOTE Annex I of the Directive 67/548/EEC on Classification, packaging and labelling of dangerous substances and its amendments and adaptations in the European Union contains a list of substances classified by the EU. Substances not in this Annex I should be classified on the basis of their intrinsic properties according to the criteria in the Directive by the person responsible for the marketing of the substance.

### 6.3 Transportation regulations and labelling

Sodium hypochlorite is listed as UN Number <sup>2)</sup> 1791.

RID <sup>3)</sup> ADR <sup>4)</sup> : class 8, classification code C9; packing group III.

IMDG <sup>5)</sup> : class 8.

IATA <sup>6)</sup>: class 8.

### 6.4 Marking

The marking shall include the following:

- name "sodium hypochlorite", trade name and type;
- net mass;
- name and address of supplier and/or manufacturer;
- statement "this product conforms to EN 15077".

### 6.5 Storage

#### 6.5.1 General

Sodium hypochlorite shall be protected against light, particularly direct sunlight. It shall be stored in cool rooms in containers made from metal with internal coating or suitable plastics materials. In order to protect metal containers from corrosion, they shall be either rubber-lined or plastic-coated.

NOTE Suitable venting should be used to prevent any pressure build-up in the containers.

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<sup>2)</sup> United Nations Number.

<sup>3)</sup> Regulations concerning International carriage of Dangerous goods by rail.

<sup>4)</sup> European Agreement concerning the international carriage of Dangerous goods by Road.

<sup>5)</sup> International Maritime transport of Dangerous Goods.

<sup>6)</sup> International Air Transport Association.