# SLOVENSKI STANDARD
# SIST EN 15514:2014

**01-september-2014**

**Nadomešča:**
**SIST EN 15514:2008**

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**Kemikalije, ki se uporabljajo za pripravo bazenske vode - Klorovodikova kislina**

Chemicals used for treatment of swimming pool water - Hydrochloric acid

Produkte zur Aufbereitung von Schwimm- und Badebeckenwasser - Salzsäure

Produits chimiques utilisés pour le traitement de l'eau des piscines - Acide chlorhydrique



**Ta slovenski standard je istoveten z: EN 15514:2014**



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**ICS:**

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|---|---|---|
| 13.060.25 | Voda za industrijsko uporabo | Water for industrial use |
| 71.100.80 | Kemikalije za čiščenje vode | Chemicals for purification of water |

**SIST EN 15514:2014** **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 15514

May 2014

ICS 71.100.80

Supersedes EN 15514:2007

English Version

# Chemicals used for treatment of swimming pool water - Hydrochloric acid

Produits chimiques utilisés pour le traitement de l'eau des piscines - Acide chlorhydrique

Produkte zur Aufbereitung von Schwimm- und Badebeckenwasser - Salzsäure

This European Standard was approved by CEN on 20 March 2014.

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

# Contents

Page

## Foreword

This document (EN 15514:2014) 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 2014 and conflicting national standards shall be withdrawn at the latest by November 2014.

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 15514:2007.

The significant technical difference between this edition and EN 15514:2007 is as follows:

— updating of 6.2 in line with current legislation.

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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 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 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 hydrochloric acid used for the treatment of swimming pool water. It describes the characteristics of hydrochloric acid and specifies the requirements and the corresponding test methods for hydrochloric acid. It gives information on its use in swimming pool water treatment. It also determines the rules relating to safe handling and use of hydrochloric acid (see Annex B).

# 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 939, *Chemicals used for treatment of water intended for human consumption - Hydrochloric acid*

# 3 Description

## 3.1 Identification

### 3.1.1 Chemical name

Hydrochloric acid.



### 3.1.2 Synonym or common names

Muriatic acid, hydrogen chloride.



### 3.1.3 Relative molecular mass

36,46.

### 3.1.4 Empirical formula

HCl.

### 3.1.5 Chemical formula

HCl.

### 3.1.6 CAS Registry Number[1)]

7647-01-0.

### 3.1.7 EINECS reference[2)]

231-595-7.

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1) Chemical Abstracts Service Registry Number.

2) European Inventory of Existing Commercial Chemical Substances.

## 3.2 Commercial forms

The product is supplied as aqueous solutions of hydrochloric acid with mass fraction of 25 % to 38 % (concentrated acid).

Dilutions of these solutions are also available.

## 3.3 Physical properties

### 3.3.1 Appearance

The solution is colourless to yellow and slightly fuming to strongly fuming, depending on concentration.

### 3.3.2 Density

The density is between 1,135 g/ml and 1,185 g/ml at 20 °C, depending on concentration.

### 3.3.3 Solubility

The product is miscible with water in any proportion.

### 3.3.4 Vapour pressure

The vapour pressure for HCl at mass fraction 30 % depending on temperature is given in Table 1.



**Table 1 — Vapour pressure of hydrochloric acid solutions**



| Temperature<br>°C | $p_{total}$<br>kPa | $p_{HCl}$<br>kPa | $p_{H_2O}$<br>kPa |
|---|---|---|---|
| 20 | 2,13 | 1,41 | 0,72 |
| 50 | 13,73 | 9,46 | 4,27 |

### 3.3.5 Boiling point at 100 kPa

The boiling point of HCl depending on concentration is given in Table 2.

**Table 2 — Boiling point of hydrochloric acid solutions**

| Concentration<br>Mass fraction in % | Boiling point at 100 kPa [a]<br>°C |
|---|---|
| 25 | 104 |
| 30 | 90 |
| 38 | 50,5 |

[a] 100 kPa = 1 bar.

### 3.3.6 Melting or freezing point

The melting or freezing point of HCl depending on concentration is given in Table 3.