SLOVENSKI STANDARD
kSIST FprEN 15514:2014

01-januar-2014

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: **FprEN 15514**

ICS:

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

kSIST FprEN 15514:2014 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

FINAL DRAFT
FprEN 15514

September 2013

ICS 71.100.80

Will supersede EN 15514:2007

English Version

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (FprEN 15514:2013) has been prepared by Technical Committee CEN/TC 164 “Water supply”, the secretariat of which is held by AFNOR.

This document is currently submitted to the Unique Acceptance Procedure.

This document will supersede 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.

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 °C	p_{total} kPa	p_{HCl} kPa	p_{H_2O} 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 Mass fraction in %	Boiling point at 100 kPa [a] °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.

Table 3 — Melting or freezing point

Concentration Mass fraction in %	Melting or freezing point °C
38	- 27
25	- 75

3.3.7 Specific heat

3,14 kJ/(kg · K) at 18 °C for HCl at mass fraction 16,83 %.

3.3.8 Viscosity (dynamic)

The viscosity of a HCl at mass fraction 30 %, solution at 15 °C, is 1,9 mPa.s.

3.3.9 Critical temperature

Not applicable.

3.3.10 Critical pressure

Not applicable.

3.3.11 Physical hardness

Not applicable.

3.4 Chemical properties

The solution of hydrochloric acid is a strong mineral acid.

4 Purity criteria

4.1 General

This European Standard specifies the minimum purity requirements for hydrochloric acid used for the treatment of swimming pool water. 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 intended for human consumption, 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 chemical parameters where these are likely to be present in significant quantities from the current production process and raw materials. If the production process or raw