

SVENSK STANDARD

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Processkemikalier för beredning av dricksvatten – Koldioxid

Chemicals used for treatment of water intended for human consumption – Carbon dioxide



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Denna standard ersätter SS-EN 936:2006, utgåva 2.

The European Standard EN 936:2013 has the status of a Swedish Standard. This document contains the official version of EN 936:2013.

This standard supersedes the Swedish Standard SS-EN 936:2006, edition 2.

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

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EUROPEAN STANDARD

EN 936

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2013

ICS 71.100.80

Supersedes EN 936:2006

English Version

Chemicals used for treatment of water intended for human consumption - Carbon dioxide

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

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Kohlenstoffdioxid

This European Standard was approved by CEN on 26 October 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.

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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

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Foreword

This document (EN 936:2013) 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 June 2014, and conflicting national standards shall be withdrawn at the latest by June 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 936:2006.

Significant technical differences between this edition and EN 936:2006 are as follows:

- a) the transportation regulations and labelling have been updated;
- b) the requirement for carbon dioxide content is now 99,9 % instead of 99,0 % in the latest edition;
- c) possible impurities are taken into account;
- d) reference to sampling is changed;
- e) revision of clause for raw materials;
- f) revision of rules for safe handling and use of the product.

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 to the 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 carbon dioxide used for treatment of water intended for human consumption. It describes the characteristics of carbon dioxide and specifies the requirements and corresponding analytical methods for carbon dioxide. It also gives information on its use in water treatment.

2 Description

2.1 Identification

2.1.1 Chemical name

Carbon dioxide.

2.1.2 Synonym or common name

Carbonic acid gas (carbonic anhydride).

2.1.3 Relative molecular mass

44,011.

2.1.4 Empirical formula

CO₂.

2.1.5 Chemical formula

CO₂.

2.1.6 CAS Registry Number¹⁾

124-38-9.

2.1.7 EINECS reference²⁾

204-696-9.

2.2 Commercial form

The carbon dioxide is supplied as a pressurised liquefied or refrigerated pressurised gas.

NOTE The solid form is not usually used for the treatment of water intended for human consumption.

1) Chemical Abstracts Service Registry Number.

2) European Inventory of Existing Commercial Chemical Substances.

2.3 Physical properties

2.3.1 Appearance

The carbon dioxide is a colourless gas or liquid.

2.3.2 Density

The density of the gas at 0 °C and 101,3 kPa ³⁾ is 1,976 8 kg/m³, while the density of the liquid at 0 °C and 4 000 kPa is 933,318 kg/m³.

2.3.3 Solubility in water

The solubility of the gas in water is 1,72 g/l at 20 °C and 101,3 kPa.

2.3.4 Vapour pressure

The vapour pressure of the liquid is 5 733,0 kPa at 20 °C.

2.3.5 Boiling point at 100 kPa

See 2.3.6.

2.3.6 Melting point

The sublimation point of solid CO₂ is -78,9 °C and 101,3 kPa.

2.3.7 Specific heat

The specific heat of carbon dioxide is 0,827 kJ/kg x K at 0 °C and 100 kPa.

2.3.8 Viscosity (dynamic)

The viscosity of the liquid is 147×10^{-7} Pa x s at 20 °C.

2.3.9 Critical temperature

The critical temperature of the liquid is 31 °C.

2.3.10 Critical pressure

The critical pressure of the carbon dioxide is 7 383 kPa.

2.3.11 Physical hardness

Not applicable.

3) 100 kPa = 1 bar.