SVENSK STANDARD
SS-EN 936:2006

Fastställd 2006-08-10

Utgåva 2

Processkemikalier för beredning av dricksvatten – Koldioxid

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

ICS 13.060.20; 71.100.80

Språk: engelska

Publicerad: oktober 2006

Europastandarden EN 936:2006 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 936:2006.

I enlighet med Statens livsmedelsverks föreskrifter om dricksvatten, SLV FS 2001:30, är koldioxid tillåten som processkemikalie för beredning av dricksvatten i Sverige.

Denna standard ersätter SS-EN 936, utgåva 1.

The European Standard EN 936:2006 has the status of a Swedish Standard. This document contains the official English version of EN 936:2006.

According to The National Food Administration´s Ordinance with regulations and general advice on drinking water, SLV FS 2001:30, carbon dioxide is permitted in Sweden as a process chemical for treatment of water intended for human consumption.

This standard supersedes the Swedish Standard SS-EN 936, edition 1.

Upplysningar om **sakinnehållet** i standarden lämnas av SIS, Swedish Standards Institute,
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EN 936

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ICS 71.100.80

Supersedes EN 936:1997

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 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 936:2006) 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 February 2007, and conflicting national standards shall be withdrawn at the latest by February 2007.

This European Standard supersedes EN 936:1997.

Significant technical differences between this edition and EN 936:1997 are as follows:

a) deletion of the reference to EU Directive 80/778/EEC of July,15 1980 in order to take into account of the last Directive in force (see [1]);

b) updating of the transportation regulations and labelling.

c) the requirement for carbon dioxide content is now only 99% instead of 99.7% in the latest edition

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.

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;

d) 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

CO_2.

2.1.5 Chemical formula

CO_2.

2.1.6 CAS Registry Number [1)]

124-38-9.

2.1.7 EINECS reference[2)]

204-696-9.

2.2 Commercial form

The carbon dioxide is supplied as a liquefied 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 1,9 768 kg/m^3, while the density of the liquid at 0 °C and 4 000 kPa is 933,318 kg/m^3.

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[3)]

(See 2.3.6).

2.3.6 Melting point

The sublimation point of solid CO_2 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 x 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 7 883 kPa.

2.3.11 Physical hardness

Not applicable.

2.4 Chemical properties

The carbon dioxide CO_2 forms a weak acid when dissolved in water. It reacts with alkalis to form carbonates and bicarbonates.

[3)] 100 kPa = 1 bar.