

SVENSK STANDARD

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Processkemikalier för beredning av dricksvatten – Ozon

Chemicals used for treatment of water intended for human consumption – Ozone

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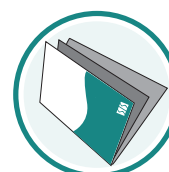
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Denna standard ersätter SS-EN 1278, utgåva 1.

The European Standard EN 1278:2010 has the status of a Swedish Standard. This document contains the official English version of EN 1278:2010.

This standard supersedes the Swedish Standard SS-EN 1278, edition 1.

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EUROPEAN STANDARD

EN 1278

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2010

ICS 71.100.80

Supersedes EN 1278:1998

English Version

Chemicals used for treatment of water intended for human consumption - Ozone

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

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Ozon

This European Standard was approved by CEN on 28 February 2010.

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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 Management Centre has the same status as the official versions.

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Foreword

This document (EN 1278:2010) 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of an identical text or by endorsement, at the latest by October 2010, and conflicting national standards shall be withdrawn at the latest by October 2010.

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.

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Differences between this edition and EN 1278:1998 are editorial to harmonize the text with other standards in this series.

Introduction

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by this Standard:

- 1) this 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;
- 2) 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 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 ozone used for treatment of water intended for human consumption. It describes the characteristics of ozone and specifies a test method for determining the ozone concentration in other gases.

2 Normative references

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 ISO 3696, *Water for analytical laboratory use — Specification and test method (ISO 3696:1987)*

3 Description

3.1 Identification

3.1.1

chemical name

ozone

3.1.2

synonym or common name

none (has sometimes been called improperly "allotropic oxygen")

3.1.3

relative molecular mass

48

3.1.4

empirical formula

O₃

3.1.5

chemical formula

O₃

3.1.6

CAS Registry Number ¹⁾

10028-15-6

3.1.7

EINECS reference ²⁾

Not applicable

3.2 Commercial form

Ozone is generated on or near the site of use.

1) Chemical Abstracts Service Registry Number

2) European Inventory of Existing Commercial Chemical Substances

3.3 Physical properties

3.3.1 Appearance

Bluish gas, the liquid is dark blue.

NOTE A weak absorption in the visual range between 435 nm and 475 nm.

3.3.2 Density

Gas : 2,144 kg/m³ at NTP (Normal Temperature Pressure, 273 K and 101,3 kPa);

Liquid : 1,574 g/cm³ at - 183 °C;

Solid : 1,728 g/cm³.

3.3.3 The gas-liquid partition coefficient

In pure water, the partition coefficient values (S) expressed in grams per cubic meter water per (grams per cubic meter) gas at 101,3 kPa are given in table 1.

Table 1 — The gas-liquid partition coefficient between water and gas phase

Temperature of water °C	Solubility S, in $\frac{\text{g/m}^3 \text{H}_2\text{O}}{\text{g/m}^3 \text{gas}}$
0	0,64
5	0,5
10	0,39
15	0,31
20	0,24
25	0,19
30	0,15
35	0,12

NOTE 1 Recent surveys of literature data are given in Bibliography. See [2], [3] and [4].

NOTE 2 S is a ratio, not an absolute concentration.

3.3.4 Vapour pressure

The vapour pressure of ozone depending on temperature is given in Table 2.

Table 2 — Vapour pressure

Temperature °C	Vapour pressure kPa
- 183	0,0147
- 180	0,028
- 170	0,188
- 160	0,897
- 150	3,306
- 140	9,892
- 130	25,331
- 120	56,928
- 110	115,322
- 100	2 139,079

3.3.5 Boiling point at 100 kPa ³⁾

- 112 °C.

NOTE : Vaporization heat : 681 kJ/m³at NTP.

3.3.6 Melting point

- 196 °C.

3.3.7 Specific heat (liquid)

Not applicable.

3.3.8 Viscosity (dynamic)

0,004 2 Pa.s at – 195 °C;

0,0015 5 Pa.s at – 183 °C.

3.3.9 Critical temperature

- 12,1 °C.

3.3.10 Critical pressure

5 460 kPa.

3.3.11 Physical hardness

Not applicable.

3) 100 kPa = 1 bar