

norm

NEN-EN 897

Chemicaliën voor de behandeling van water bestemd voor menselijke consumptie - Natriumcarbonaat

Chemicals used for treatment of water intended for human consumption - Sodium carbonate

september 1998
ICS 71.100.80

Vervangt NEN-EN 897:1992 Ontw.

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- EN 897:1998

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<u>Vermelde norm</u>	<u>Nederlandse norm</u>	<u>Titel</u>
EN ISO 3696	NEN-EN-ISO 3696	Water voor analytische laboratoriumdoeleinden - Eisen en beproevingsmethoden
ISO 740	-	-
ISO 746	-	-
ISO 2460	-	-
ISO 3165	-	-
ISO 5666-1:1983	-	-
ISO 6206	-	-
ISO 8213	-	-

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ICS 71.100.80

Descriptors: potable water, water treatment, chemical compounds, sodium carbonates, description, physical properties, chemical properties, impurities, toxic substances, tests, labelling, storage, utilization

English version

Chemicals used for treatment of water intended for human consumption - Sodium carbonate

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

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Natriumcarbonat

This European Standard was approved by CEN on 1 July 1998.

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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 Central Secretariat has the same status as the official versions.

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Contents

Foreword	3
Introduction	4
1 Scope	4
2 Normative references	4
3 Description	5
3.1 Identification.....	5
3.2 Commercial forms.....	5
3.3 Physical properties.....	6
3.4 Chemical properties.....	7
4 Purity criteria	7
4.1 General.....	7
4.2 Composition of commercial product.....	7
4.3 Impurities and main by-products.....	7
4.4 Toxic substances.....	8
5 Test methods	8
5.1 Sampling.....	8
5.2 Analyses.....	8
6 Labelling - Transportation - Storage	10
6.1 Means of delivery.....	10
6.2 Risk and safety labelling according to the EU Directives.....	10
6.3 Transportation regulations and labelling.....	10
6.4 Marking.....	10
6.5 Storage.....	11
Annex A (informative) General information on sodium carbonate	12
Annex B (normative) Analytical methods	13
Annex C (normative) General rules relating to safety	21
Annex D (informative) Bibliography	22

Foreword

This European Standard 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 January 1999, and conflicting national standards shall be withdrawn at the latest by January 1999.

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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.

1 Scope

This European Standard is applicable to anhydrous sodium carbonate used for treatment of water intended for human consumption. It describes the characteristics of sodium carbonate and specifies the requirements and the corresponding test methods for sodium carbonate. It gives information on its use in water treatment.

2 Normative references

This present European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN ISO 3696	Water for analytical laboratory use - Specification and test methods (ISO 3696 - 1987)
ISO 740	Sodium carbonate for industrial use - Determination of total soluble alkalinity - Titrimetric method
ISO 746	Sodium carbonate for industrial use - Determination of matter insoluble in water at 50 degrees C
ISO 2460	Sodium hydrogen carbonate for industrial use - Determination of iron content - 1,10 - Phenanthroline photometric method
ISO 3165	Sampling of chemical products for industrial use - Safety in sampling
ISO 5666-1:1983	Water quality - Determination of total mercury by flameless atomic absorption spectrometry - Part 1 : Methode after digestion with permanganate-peroxodisulfat
ISO 6206	Chemical products for industrial use - Sampling - Vocabulary
ISO 8213	Chemical products for industrial use - Sampling techniques - Solid chemical products in the form of particles varying from powders to coarse lumps

3 Description

3.1 Identification

3.1.1 Chemical name

Sodium carbonate.

3.1.2 Synonym or common names

Soda ash, anhydrous sodium carbonate, light soda ash, heavy soda ash.

3.1.3 Relative molecular mass

105,99.

3.1.4 Empirical formula

Na_2CO_3 .

3.1.5 Chemical formula

Na_2CO_3 .

3.1.6 CAS Registry Number ¹⁾

497-19-8.

3.1.7 EINECS reference ²⁾

207-838-8.

3.2 Commercial forms

The product is available as dry powder or fine granules and described as light soda or heavy soda according to bulk density (see 3.3.2).

¹⁾ Chemical Abstracts Service Registry Number.

²⁾ European Inventory of Existing Commercial Chemical Substances.

3.3 Physical properties

3.3.1 Appearance

The product is a white powder or crystals, slightly hygroscopic.

3.3.2 Density

Solid : 2,53 g/cm³

Bulk density :

- ranging from 0,5 kg/dm³ to 0,65 kg/dm³ (light soda ash) ;
- ranging from 0,8kg/dm³ to 1,2 kg/dm³ (heavy soda ash).

3.3.3 Solubility in water

212 g/l at 20 °C.

3.3.4 Vapour pressure

Not applicable.

3.3.5 Boiling point at 100 kPa³⁾

Not applicable.

3.3.6 Melting point

851 °C.

3.3.7 Specific heat

1,043 kJ/kg.K.

3.3.8 Viscosity, dynamic

Not applicable.

³⁾ 100 kPa = 1 bar.

3.3.9 Critical temperature

Not applicable.

3.3.10 Critical pressure

Not applicable.

3.3.11 Physical hardness

The hardness of solid sodium carbonate is given as 1 to 2 on the Mohs'scale of hardness.

3.4 Chemical properties

Sodium carbonate reacts exothermically with acids with formation of carbon dioxide.

Sodium carbonate is slightly hygroscopic and dissolution in water is an exothermic reaction.

4 Purity criteria

4.1 General

Limits have been given for impurities and toxic substances where these are likely to be present in significant quantities from the current production process and raw materials. If a change in the production process or raw materials leads to significant quantities of other impurities or by-products being present, this shall be notified to the user.

4.2 Composition of commercial product

The product shall contain not less than 99 % (m/m) of Na_2CO_3 .

4.3 Impurities and main by-products

The product shall conform to the requirements specified in table 1.

The concentration limits refer to Na_2CO_3 .

Table 1 : Impurities

Impurity		Limit in mg/kg of Na_2CO_3
Iron(II) ¹⁾	max.	20
Insolubles ²⁾	max.	200
1) : Iron(II) can cause organoleptic problems.		
2) : Indicate the presence of foreign matter.		

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