SLOVENSKI STANDARD
SIST EN 1405:2023

01-december-2023

Nadomešča:
SIST EN 1405:2009

Kemikalije, ki se uporabljajo za pripravo pitne vode - Natrijev alginat

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

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Natrium-Alginat

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

Ta slovenski standard je istoveten z: **EN 1405:2023**

ICS:

13.060.20	Pitna voda	Drinking water
71.100.80	Kemikalije za čiščenje vode	Chemicals for purification of water

SIST EN 1405:2023 **en,fr,de**

EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 1405

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English Version

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

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

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Natrium-Alginat

This European Standard was approved by CEN on 14 August 2023.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Page

European foreword

This document (EN 1405:2023) 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of an identical text or by endorsement, at the latest by April 2024, and conflicting national standards shall be withdrawn at the latest by April 2024.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1405:2009.

In comparison with the previous edition EN 1405:2009, the following technical modifications have been made:

a) updating in line with current legislation;

b) modification of 8.3 on transportation regulations and labelling, adding the sentence “The user shall be aware of the incompatibilities between transported products.”;

c) modification of 8.4 on marking. The requirements of marking are also applied to the accompanying documents.

Annex A is informative and gives information on origin, use and handling of sodium alginate.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

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

1) this document 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 this document 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 document is subject to regulation or control by national authorities.

WARNING — The use of this document may involve hazardous substances, materials, operations and equipment. This document does not purport to address all the safety aspects associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

1 Scope

This document is applicable to sodium alginate used for treatment of water intended for human consumption. It describes the characteristics of sodium alginate and specifies the requirements and the corresponding test methods for sodium alginate. It gives information on their use in water treatment.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3696:1995, *Water for analytical laboratory use — Specification and test methods (ISO 3696:1987)*

ISO 3165:1976, *Sampling of chemical products for industrial use — Safety in sampling*

ISO 6206:1979, *Chemical products for industrial use — Sampling — Vocabulary*

ISO 8213:1986, *Chemical products for industrial use — Sampling techniques — Solid chemical products in the form of particles varying from powders to coarse lumps*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp/

— IEC Electropedia: available at https://www.electropedia.org/

4 Description

4.1 Identification

4.1.1 Chemical name(s)

Sodium alginate.

NOTE Linear glycuronoglycan consisting mainly of (1-4) linked β-D-mannuronic acid units and (1-4) linked α-L-guluronic acid units in pyranose ring form.

4.1.2 Synonym(s) or common name(s)

Algin.

4.1.3 Relative molecular mass

Typically in the range of 10 000 to 250 000 Daltons.

4.1.4 Empirical formulae

— $-(C_6O_6H_7Na)_n-$

where

n is variable depending on the product.

4.1.5 Chemical formulae

The following formula (Figure 1) illustrates typical structures of Sodium alginate (with D-mannuronic acid units):

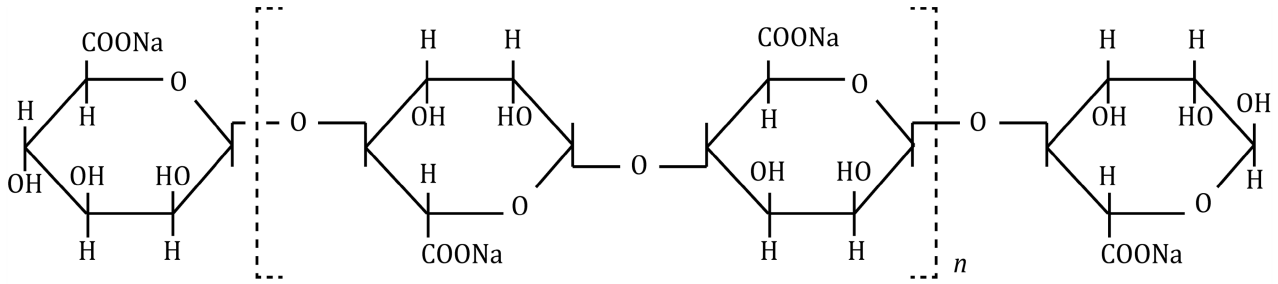

Figure 1 — Sodium alginate (with D-mannuronic acid units)

where

n is variable depending on the product.

4.1.6 CAS Registry Numbers [1)]

9005-38-3

4.1.7 EINECS reference [2)]

The EINECS inventory lists alginic acid but does not apply numbers to the salts of alginic acid. The EINECS number for alginic acid is 232-68-01.

The conformity of polymers to EINECS is assessed on the basis of the monomers of which they are composed. Thus, EINECS reference numbers do not exist for polymers.

Polymers are exempt from registration according to EU Regulation 1907/2006/EC (see [3]), *REACH*.

Monomer substance(s) and any other substance(s) in the form of monomeric units and chemically bound substance(s) may have to be REACH registered according to Article 6 of EU Regulation 1907/2006/EC.

4.2 Commercial form

Sodium alginate as specified in this document is available as a solid containing a small amount of residual moisture.

5 Physical properties

5.1 Appearance

The product is a white to pale yellowish-brown solid in the form of powder.

[1)] Chemical Abstracts Service Registry Number.
[2)] European Inventory of Existing Commercial Chemical Substances.

5.2 Bulk density

The bulk density of the product is typically in the range 0,7 g/cm^3 to 1,0 g/cm^3.

5.3 Solubility

The product is soluble in hot or cold water. Its solubility is limited only by viscosity, with a paste being formed at concentrations of approximately 50 g/l and above.

5.4 Vapour pressure

Not applicable.

5.5 Boiling point at 100 kPa [3)]

Not applicable.

5.6 Melting point

The product will decompose typically at approximately 200 °C.

5.7 Specific heat

Not applicable.

5.8 Viscosity dynamic

Not applicable.

5.9 Critical temperature

Not applicable.

5.10 Critical pressure

Not applicable.

5.11 Physical hardness

Not applicable.

6 Chemical properties

6.1 General

Sodium alginate is a non-hazardous material and not intrinsically reactive. However, in common with many other organic compounds, a strong exothermic reaction will occur if it is brought into contact in the dry state with a strong acid or strong oxidizing agent.

NOTE In dilute solution there can be a reaction with, or destruction by, some of the disinfection and oxidizing agents used in water treatment.

6.2 Purity criteria

6.2.1 General

This document specifies the minimum purity requirements for sodium alginate used for the treatment of water intended for human consumption. Limits are given for impurities commonly present in the

[3)] 100 kPa = 1 bar.