

SVENSK STANDARD

SS-EN 1405:2009

Fastställt/Approved: 2009-09-07

Publicerad/Published: 2009-10-13

Utgåva/Edition: 2

Språk/Language: engelska/English

ICS: 13.060.20; 71.100.80

Processkemikalier för beredning av dricksvatten – Natriumalginat

**Chemicals used for treatment of water intended for human
consumption – Sodium alginate**



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Europastandarden EN 1405:2009 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 1405:2009.

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

Denna standard ersätter SS-EN 1405, utgåva 1.

The European Standard EN 1405:2009 has the status of a Swedish Standard. This document contains the official English version of EN 1405:2009.

According to The National Food Administration's Ordinance with regulations on drinking water, SLV FS 2001:30, sodium alginate is presently not permitted in Sweden as a process chemical for treatment of water intended for human consumption.

This standard supersedes the Swedish Standard SS-EN 1405, edition 1.

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1405

August 2009

ICS 71.100.80

Supersedes EN 1405:1998

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 24 July 2009.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, 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 1405:2009) 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 2010, and conflicting national standards shall be withdrawn at the latest by February 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.

This document supersedes EN 1405:1998.

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

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, 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 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 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 this 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.

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

1 Scope

This European standard 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.

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 methods (ISO 3696:1987)*

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

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 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.

3.1.2 Synonym or common name

Algin.

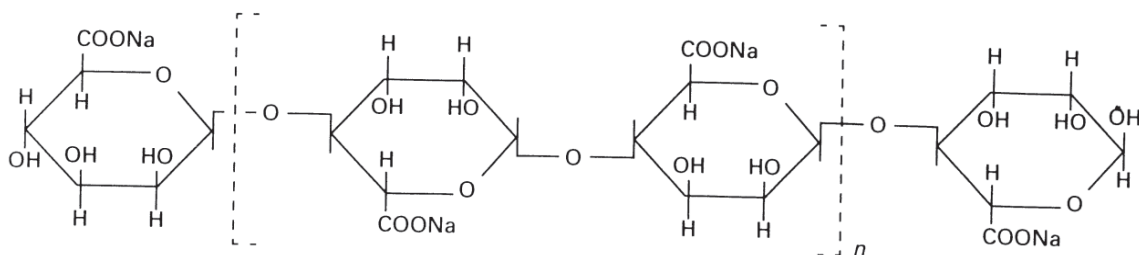
3.1.3 Relative molecular mass

10 000 to 250 000 approximately.

3.1.4 Empirical formula

$(C_6O_6H_7Na)_n$.

3.1.5 Chemical formula



Sodium alginate (with D-mannuronic acid units)

3.1.6 CAS Registry Number¹⁾

9005-38-3.

3.1.7 EINECS reference²⁾

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.

3.2 Commercial form

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

3.3 Physical properties

3.3.1 Appearance

The product is a white to pale yellowish-brown powder.

3.3.2 Density

The bulk density of the product is typically in the range 0,7 g/cm³ to 1,0 g/cm³.

3.3.3 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.

3.3.4 Vapour pressure

Not applicable.

3.3.5 Boiling point at 100 kPa

Not applicable.

1) Chemical Abstracts Service Registry Number.

2) European Inventory of Existing Commercial Chemical Substances.

3.3.6 Melting point

The product decomposes at approximately 200 °C.

3.3.7 Specific heat

Not applicable.

3.3.8 Viscosity, dynamic

Not applicable.

3.3.9 Critical temperature

Not applicable.

3.3.10 Critical pressure

Not applicable.

3.3.11 Physical hardness

Not applicable.

3.4 Chemical properties

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 oxidizing agent or strong acid.

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

4 Purity criteria

4.1 General

This European Standard 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 product. Depending on the raw material and the manufacturing process other impurities may be present and, if so, this shall be notified to the user and when necessary to relevant authorities.

NOTE Users of this product should check the national regulations in order to clarify whether it is of appropriate purity for treatment of water intended for human consumption, taking into account raw water quality, required dosage, contents of other impurities and additives used in the product not stated in the product standard.

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