

SVENSK STANDARD

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Processkemikalier för beredning av dricksvatten – Polyaluminiumhydroxidsilikatsulfat

**Chemicals used for treatment of water intended for human
consumption – Polyaluminium hydroxide silicate sulfate**



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Europastandarden EN 886:2004 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 886:2004.

Denna standard ersätter SS-EN 886, utgåva 1.

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

The European Standard EN 886:2004 has the status of a Swedish Standard. This document contains the official English version of EN 886:2004.

This standard supersedes the Swedish Standard SS-EN 886, edition 1.

According to The National Food Administration's Ordinance with regulations and general advice on drinking water, SLV FS 2001:30, polyaluminium hydroxide silicate sulfate is not permitted as a process chemical for treatment of water intended for human consumption in Sweden.

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 886

November 2004

ICS 71.100.80

Supersedes EN 886:2001

English version

Chemicals used for treatment of water intended for human consumption - Polyaluminium hydroxide silicate sulfate

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

Produkte zur Aufbereitung von Wasser für den Menschlichen Gebrauch - Polyaluminiumhydroxidsilikatsulfat

This European Standard was approved by CEN on 30 September 2004.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This document (EN 886:2004) 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 May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

This document supersedes EN 886:2001.

Significant technical differences between this edition and EN 886:2001 are as follows:

- a) replacement of the reference to EU Directive 80/778 of July, 15 1980 with the latest Directive in force (see[1]);
- b) expansion of annex A by addition of A.2 "quality of commercial product".

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, Slovakia, Slovenia, Spain, Sweden, Switzerland and 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.

1 Scope

This document is applicable to polyaluminium hydroxide silicate sulfate used for treatment of water intended for human consumption. It describes the characteristics of polyaluminium hydroxide silicate sulfate and specifies the requirements for polyaluminium hydroxide silicate sulfate and refers to the corresponding analytical methods. It gives information on its use in water treatment. It also determines the rules to safe handling and use of polyaluminium hydroxide silicate sulfate (see annex B).

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 1302, *Chemicals used for treatment of water intended for human consumption - Aluminium based coagulants - Analytical methods.*

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

ISO 6206, *Chemical products for industrial use - Sampling – Vocabulary.*

3 Description

3.1 Identification

3.1.1 Chemical name

Polyaluminium hydroxide silicate sulfate.

3.1.2 Synonym or common names

Polyaluminium silicate sulfate, PASS.

3.1.3 Relative molecular mass

Variable (see 3.1.4).

3.1.4 Empirical formula

Polyaluminium hydroxide silicate sulfate is a synthetically manufactured polymerized basified aluminium salt containing silicate. The structure of the product is polymeric.

$\text{Al}(\text{OH})_a(\text{SO}_4)_b(\text{SiOx})_c$ with $a + 2b + 2c(x - 2) = 3$

and $a = 1,05$ to $2,0$

$b = 0,30$ to $1,12$

$c = 0,005$ to $0,10$

$x = 2,0$ to $4,0$

3.1.5 Chemical formula

Variable (see 3.1.4).

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3.1.6 CAS Registry Number¹⁾

(Aluminium hydroxide silicate sulfate): 131148-05-5.

3.1.7 EINECS reference²⁾

The following is a list of EINECS reference numbers for products or their starting materials.

Basic aluminium sulfate, PAS 259-881-7

Aluminosilicate 215-475-1

Sodium sulfate 231-820-9

3.2 Commercial form

The product is available as a liquid.

3.3 Physical properties

3.3.1 Appearance

Polyaluminium hydroxide silicate sulfate is a colourless, slightly opalescent liquid.

3.3.2 Density

The density depends on the particular composition, especially the aluminium ion content, expressed as a mass fraction of aluminium (Al) in %.

Typical value is 1,25 g/ml for 4,2 % Al.

3.3.3 Solubility in water

Polyaluminium hydroxide silicate sulfate is fully miscible with water.

NOTE Depending on the particular product, dilute solutions can hydrolyse and form a precipitate.

3.3.4 Vapour pressure at 20 °C

Not known.

3.3.5 Boiling point at 100 kPa³⁾

100 °C.

3.3.6 Crystallization point

Typical value is 0 °C for 4,2 % Al.

3.3.7 Specific heat

Not known.

1) Chemical Abstracts Service Registry Number.

2) European Inventory of Existing Commercial Chemical Substances.

3) 100 kPa = 1 bar.

3.3.8 Viscosity (dynamic)

Typical value is 11 mPa.s for 4,2 % Al at 25 °C.

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

Polyaluminium hydroxide silicate sulfate is a mildly acidic liquid which hydrolyses and forms a precipitate of aluminium hydroxide when diluted beyond a particular concentration.

NOTE Since aluminium compounds are amphoteric in nature, the solubility of aluminium depends on the pH value and the product should be used within an appropriate pH range.