SLOVENSKI STANDARD
SIST EN 1407:2008

01-april-2008

Nadomešča:
SIST EN 1407:1999

Kemikalije, ki se uporabljajo za pripravo pitne vode - Anionski in neionski poliakrilamidi

Chemicals used for treatment of water intended for human consumption - Anionic and non-ionic polyacrylamides

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Anionische und nicht-ionische Polyacrylamide

Produits chimiques utilisés pour le traitement de l'eau destinée à la consommation humaine - Polyacrylamides anioniques et non ioniques

Ta slovenski standard je istoveten z: **EN 1407:2008**

ICS:

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

SIST EN 1407:2008 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1407

January 2008

ICS 71.100.80

Supersedes EN 1407:1998

English Version

Chemicals used for treatment of water intended for human consumption - Anionic and non-ionic polyacrylamides

Produits chimiques utilisés pour le traitement de l'eau destinée à la consommation humaine - Polyacrylamides anioniques et non ioniques

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Anionische und nicht-ionische Polyacrylamide

This European Standard was approved by CEN on 10 November 2007.

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.

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

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Foreword

This document (EN 1407:2008) 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 July 2008, and conflicting national standards shall be withdrawn at the latest by July 2008.

This document supersedes EN 1407:1998.

Significant technical differences between this edition and EN 1407:1998 are as follows:

(a) reduction in the limit value for acrylamide from 250 mg/kg to 200 mg/kg in 4.4;

(b) updating of the reference to the drinking water directive from 80/778/EEC to 98/83/EC;

(c) provision of more information on treatment dose in Annex A.

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 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 European Standard:

1) this European 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 European 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 anionic and non-ionic polyacrylamides used for treatment of water intended for human consumption. It describes the characteristics of anionic and non-ionic polyacrylamides and specifies the requirements and the corresponding test methods for anionic and non-ionic polyacrylamides. It gives information on their use in water treatment.

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 names

Copolymer of acrylamide and acrylic acid salt, or homopolymer of acrylamide.

3.1.2 Synonyms or common names

Anionic polyacrylamide or non-ionic polyacrylamide.

NOTE The more general terms: "anionic (or non-ionic) polymer", "anionic polyelectrolyte" and "anionic (or non-ionic) flocculant" are used but can also cover other chemicals referred to in other European Standards.

3.1.3 Relative molecular mass

Typically in the range of 1 million to 20 million.

3.1.4 Empirical formulae

Non-ionic polyacrylamide:

$(C_3H_5NO)_{x}$

Anionic polyacrylamide:

$(C_3H_5NO)_{x}$ $(C_3H_3O_2A)_{y}$

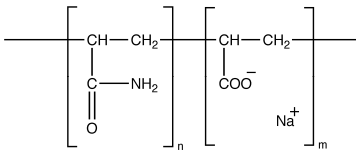
where

A is a positive ion;

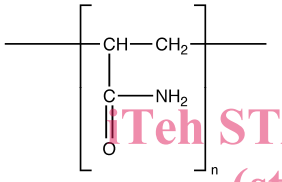
x and *y* are variable depending on the product.

3.1.5 Chemical formulae

Anionic polyacrylamide:



Non-ionic polyacrylamide:



where

m and *n* are variable depending on the product.

3.1.6 CAS Registry Numbers [1)]

The following is an exemplary list of CAS Registry Numbers for typical anionic or non-ionic polyacrylamides:

25085-02-3

9003-05-8

9003-04-7

3.1.7 EINECS reference [2)]

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.

3.2 Commercial form

Anionic or non-ionic polyacrylamides as specified in this standard are available as solids containing a small amount of residual moisture.

3.3 Physical properties

3.3.1 Appearance

The product is a white or off-white solid in the form of granule, flake or powder.

3.3.2 Density

The bulk density of the product is typically in the range 0,6 g/cm^3 to 0,9 g/cm^3.

3.3.3 Solubility

The product is soluble in cold water. Its solubility is limited only by viscosity, with a gel being formed at concentrations of approximately 20 g/l and above.

3.3.4 Vapour pressure

Not applicable.

3.3.5 Boiling point at 100 kPa

Not applicable.

3.3.6 Melting point

The product decomposes at approximately 200 °C.

[1)] Chemical Abstracts Service Registry Number.

[2)] European Inventory of Existing Commercial Chemical Substances.

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

Anionic and non-ionic polyacrylamides are non-hazardous materials and not intrinsically reactive. However, in common with many other organic compounds, a strong exothermic reaction will occur if they are 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.

4 Purity criteria

4.1 General

This European Standard specifies the minimum purity requirements for anionic and non-ionic polyacrylamides 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 and contents of other impurities and additives used in the product not stated in the product standard.

Limits have been given for impurities and chemical 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 lead to significant quantities of impurities, by-products or additives being present, this shall be notified to the user.

4.2 Composition of commercial product

The anionic or non-ionic polyacrylamide shall be free of any visible extraneous matter.

NOTE Various parameters can be checked as part of assessment of product quality (see 5.2.2).