



SLOVENSKI STANDARD SIST EN 1410:2023

01-december-2023

Nadomešča:
SIST EN 1410:2008

Kemikalije, ki se uporabljajo za pripravo pitne vode - Kationski poliakrilamidi

Chemicals used for treatment of water intended for human consumption - Cationic polyacrylamides

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Kationische Polyacrylamide

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

Ta slovenski standard je istoveten z: **EN 1410:2023**

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ICS:

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

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EUROPEAN STANDARD

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October 2023

ICS 71.100.80

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Chemicals used for treatment of water intended for human consumption - Cationic polyacrylamides

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

Produkte zur Aufbereitung von Wasser für den
menschlichen Gebrauch - Kationische Polyacrylamide

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

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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EN 1410:2023 (E)**European foreword**

This document (EN 1410:2023) 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of an identical text or by endorsement, at the latest by April 2024, and conflicting national standards shall be withdrawn at the latest by April 2024.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 1410:2008.

In comparison with the previous edition EN 1410:2008, 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 cationic polyacrylamides.

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.

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EN 1410:2023 (E)**1 Scope**

This document is applicable to cationic polyacrylamides used for treatment of water intended for human consumption. It describes the characteristics of cationic polyacrylamides and specifies the requirements and the corresponding test methods for cationic polyacrylamides. 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)**

Copolymer of acrylamide and amine ester or amide.

4.1.2 Synonym(s) or common name(s)

Cationic polyacrylamide.

NOTE The more general terms: “cationic polymer”, “cationic polyelectrolyte” and “cationic flocculant” are used but can also cover other chemicals referred to in other European standards.

4.1.3 Relative molecular mass

Typically in the range of 1 million to 20 million Daltons.

4.1.4 Empirical formula

— $-(C_3H_5NO)_x - (C_aH_bN_cO_dA)_y -$

where

- A is a negative ion;
a, b, c and *d* are variable depending on the cationic monomer;
x is variable depending on the product;
y is variable depending on the product.

4.1.5 Chemical formulae

The following formula illustrates typical structures of cationic polyacrylamide:

— copolymer of acrylamide and amine ester (Figure 1)

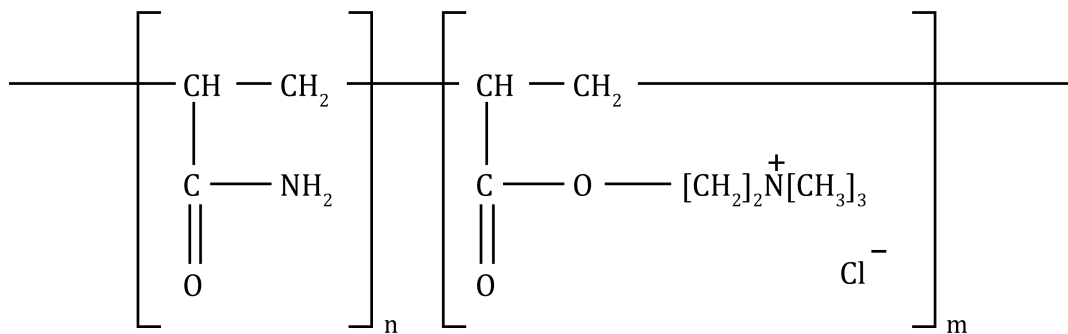


Figure 1 — Copolymer of acrylamide and amine ester

— copolymer of acrylamide and amine amide (Figure 2)

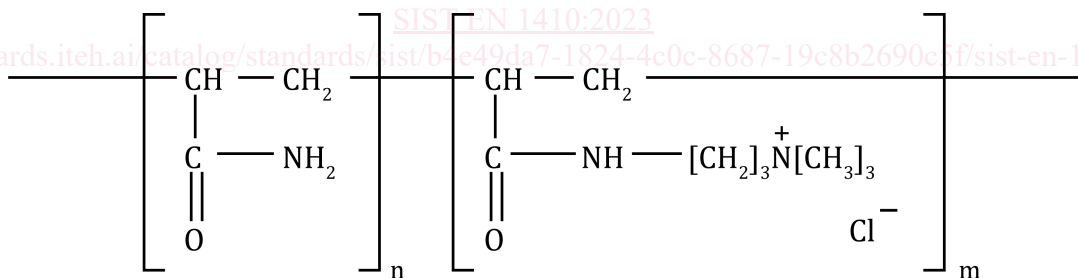


Figure 2 — Copolymer of acrylamide and amine amide

where

- m* is variable depending on the product;
n is variable depending on the product.

EN 1410:2023 (E)**4.1.6 CAS Registry Numbers ¹⁾**

The following is an exemplary list of CAS Registry Numbers for typical cationic polyacrylamides:

- 69418-26-4
- 35429-19-7
- 52285-95-7
- 26006-22-4
- 60162-07-4
- 68227-15-6
- 55216-72-3
- 26796-75-8
- 74153-51-8
- 75150-29-7
- 26427-01-0
- 58627-30-8
- 68039-13-4

4.1.7 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.

Polymers are exempt from registration according to EU Regulation 1907/2006/EC (see [3]), *REACH*. 1410-2023

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

Cationic polyacrylamides as specified in this document are available as solids containing a small amount of residual moisture.

5 Physical properties**5.1 Appearance**

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

5.2 Bulk density

The bulk density of the product is typically in the range 0,5 g/cm³ to 0,9 g/cm³.

¹⁾ Chemical Abstracts Service Registry Number.

²⁾ European Inventory of Existing Commercial Chemical Substances.