SLOVENSKI STANDARD
oSIST prEN 1408:2022

01-julij-2022

Kemikalije, ki se uporabljajo za pripravo pitne vode - Poli(dialildimetil amonijev klorid)

Chemicals used for treatment of water intended for human consumption - Poly (diallyldimethylammonium chloride)

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Poly (diallyldimethylammoniumchlorid)

Produits chimiques utilisés pour le traitement de l'eau destinée à la consommation humaine - Poly(chlorure de diméthyldiallylammonium)

Ta slovenski standard je istoveten z: **prEN 1408**

ICS:

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71.100.80	Kemikalije za čiščenje vode	Chemicals for purification of water

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

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English Version

Chemicals used for treatment of water intended for human consumption - Poly(diallyldimethylammonium chloride)

Produits chimiques utilisés pour le traitement de l'eau destinée à la consommation humaine - Poly(chlorure de diméthyldiallylammonium)

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Poly(diallyldimethylammoniumchlorid)

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

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European foreword

This document (prEN 1408:2022) has been prepared by Technical Committee CEN/TC 164 “Water supply”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1408:2008.

In comparison with the previous edition EN 1408:2008, 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 must 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.

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 poly (diallyldimethylammonium chloride) used for treatment of water intended for human consumption. It describes the characteristics of poly (diallyldimethylammonium chloride) and specifies the requirements and the corresponding test methods for poly (diallyldimethylammonium chloride). 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*

3 Terms and definitions

No terms and definitions are listed in this document.

4 Description

4.1 Identification

4.1.1 Chemical name(s)

2-Propen-1-aminium, N,N-dimethyl-N-2-propenyl, chloride, homopolymer.

4.1.2 Synonym(s) or common name(s)

— Poly (diallyldimethylammonium chloride);

— Poly (dimethyldiallylammonium chloride);

— PolyDADMAC.

NOTE The more general terms: “quaternary ammonium polyelectrolyte”, “cationic polymer”, “cationic polyelectrolyte”, “polymer coagulant” 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 20 000 to 1 million Daltons.

4.1.4 Empirical formula

— $-(C_8H_{16}NCl)_n-$

where

n is variable depending on the product.

4.1.5 Chemical formula

The Figure 1 is the typical structure.

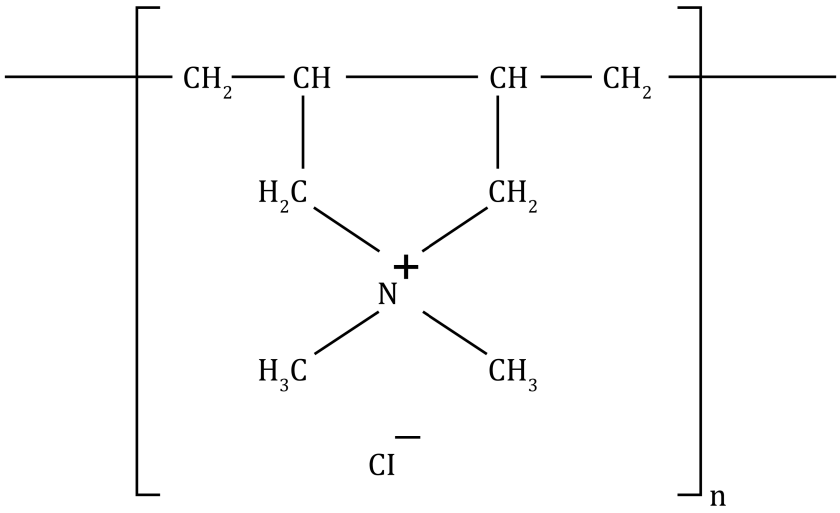

Figure 1 — Poly (diallyldimethylammonium chloride) chemical formula

where

n is variable depending on the product.

4.1.6 CAS Registry Numbers [1)]

26062-79-3

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.

NOTE DADMAC monomer is listed in EINECS (EINECS reference 230-993-8; CAS Registry Number 7398-69-8).

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

PolyDADMAC as specified in this standard is an aqueous solution, the concentration (active content) of which is approximately 10 percent to 50 percent mass fraction (see 7.2.2.2).

For additional information on polyDADMAC, see Annex A.

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

5 Physical properties

5.1 Appearance

The product is a clear, colourless to amber-coloured liquid.

5.2 Density

The density of the solution depends on the concentration. A typical value is 1,09 g/ml for 40 % mass fraction polyDADMAC at 20 °C.

5.3 Solubility

The product is miscible with water at all concentrations.

5.4 Vapour pressure

A typical value is 3,2 kPa for 40 % mass fraction polyDADMAC at 20 °C.

5.5 Boiling point at 100 kPa [3)]

Approximately 100 °C.

5.6 Freezing point

Typical freezing points relative to polyDADMAC content are given in Table 1.

Table 1 — Freezing points

% mass fraction of PolyDADMAC	Freezing point (°C)
20	- 1
30	- 6
40	- 15

5.7 Specific heat

Typical specific heats relative to polyDADMAC content are given in Table 2.

Table 2 — Specific heats

% mass fraction of PolyDADMAC	Specific heat (kJ/kg.K)
20	3,78
30	3,57
40	3,36

[3)] 100 kPa = 1 bar.

5.8 Viscosity dynamic

The viscosity is dependent on molecular mass and active content. Typically, it is in the range of 10 mPa.s to 10 000 mPa.s.

5.9 Critical temperature

Not applicable.

5.10 Critical pressure

Not applicable.

5.11 Physical hardness

Not applicable.

6 Chemical properties

6.1 General

PolyDADMAC 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 with strong acids or oxidizing agents.

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 polyDADMAC 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.

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.

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.

6.2.2 Impurities and main by-products

Based on the raw materials and manufacturing process (see A.1), there are no significant concentrations of additional reactants or by products which are relevant to the application of these products in drinking water treatment.

6.3 Composition of commercial product

The following requirements shall apply to polyDADMAC:

— there shall be no visible insoluble gel or extraneous matter;