



# SLOVENSKI STANDARD

## SIST EN 1408:2023

01-december-2023

Nadomešča:  
SIST EN 1408:2008

---

**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 diméthylallylammonium)

**Ta slovenski standard je istoveten z: EN 1408:2023**

<https://standards.iteh.ai/catalog/standards/sist/04f75c86-9bb9-4d66-ab45-359cc8d79723/sist-en-1408-2023>

---

**ICS:**

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

**SIST EN 1408:2023**

**en,fr,de**



EUROPEAN STANDARD

EN 1408

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2023

ICS 71.100.80

Supersedes EN 1408:2008

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 diméthylallylammonium)

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

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

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

CEN members are the national standards bodies of 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 United Kingdom.

# Document Preview

[SIST EN 1408:2023](https://standards.iteh.ai/catalog/standards/sist/04f75c86-9bb9-4d66-ab45-359cc8d79723/sist-en-1408-2023)

<https://standards.iteh.ai/catalog/standards/sist/04f75c86-9bb9-4d66-ab45-359cc8d79723/sist-en-1408-2023>



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

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

<b>Contents</b>	<b>Page</b>
European foreword .....	4
Introduction .....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions.....	6
4 Description.....	6
4.1 Identification.....	6
4.1.1 Chemical name(s).....	6
4.1.2 Synonym(s) or common name(s).....	6
4.1.3 Relative molecular mass .....	6
4.1.4 Empirical formula.....	6
4.1.5 Chemical formula.....	7
4.1.6 CAS Registry Numbers.....	7
4.1.7 EINECS reference.....	7
4.2 Commercial form .....	8
5 Physical properties .....	8
5.1 Appearance .....	8
5.2 Density .....	8
5.3 Solubility.....	8
5.4 Vapour pressure.....	8
5.5 Boiling point at 100 kPa .....	8
5.6 Freezing point .....	8
5.7 Specific heat.....	8
5.8 Viscosity dynamic .....	9
5.9 Critical temperature .....	9
5.10 Critical pressure.....	9
5.11 Physical hardness.....	9
6 Chemical properties.....	9
6.1 General.....	9
6.2 Purity criteria.....	9
6.2.1 General.....	9
6.2.2 Impurities and main by-products .....	9
6.3 Composition of commercial product .....	9
6.4 Chemical parameters.....	10
7 Test methods .....	10
7.1 Sampling.....	10
7.1.1 General.....	10
7.1.2 Sampling from drums and bottles .....	10
7.2 Analyses.....	11
7.2.1 General.....	11
7.2.2 Main product .....	11
7.2.3 Impurities .....	13
8 Labelling - transportation - storage.....	17

<b>8.1</b>	<b>Means of delivery</b> .....	<b>17</b>
<b>8.2</b>	<b>Labelling according to the EU Legislation</b> .....	<b>17</b>
<b>8.3</b>	<b>Transportation regulations and labelling</b> .....	<b>18</b>
<b>8.4</b>	<b>Marking</b> .....	<b>18</b>
<b>8.5</b>	<b>Storage</b> .....	<b>18</b>
<b>8.5.1</b>	<b>Long term stability</b> .....	<b>18</b>
<b>8.5.2</b>	<b>Storage incompatibilities</b> .....	<b>18</b>
<b>Annex A (informative) General information on polyDADMAC</b> .....		<b>19</b>
<b>A.1</b>	<b>Origin</b> .....	<b>19</b>
<b>A.1.1</b>	<b>Raw materials</b> .....	<b>19</b>
<b>A.1.2</b>	<b>Manufacturing process</b> .....	<b>19</b>
<b>A.2</b>	<b>Use</b> .....	<b>19</b>
<b>A.2.1</b>	<b>Function</b> .....	<b>19</b>
<b>A.2.2</b>	<b>Form in which it is used</b> .....	<b>19</b>
<b>A.2.3</b>	<b>Treatment dose</b> .....	<b>19</b>
<b>A.2.4</b>	<b>Means of application</b> .....	<b>19</b>
<b>A.2.5</b>	<b>Secondary effects</b> .....	<b>19</b>
<b>A.2.6</b>	<b>Removal of excess product</b> .....	<b>19</b>
<b>A.3</b>	<b>Rules for safe handling and use</b> .....	<b>19</b>
<b>A.4</b>	<b>Emergency procedures</b> .....	<b>20</b>
<b>A.4.1</b>	<b>First aid</b> .....	<b>20</b>
<b>A.4.2</b>	<b>Spillage</b> .....	<b>20</b>
<b>A.4.3</b>	<b>Fire</b> .....	<b>20</b>
<b>Bibliography</b> .....		<b>21</b>

SIST EN 1408:2023

<https://standards.iteh.ai/catalog/standards/sist/04f75c86-9bb9-4d66-ab45-359cc8d79723/sist-en-1408-2023>

**EN 1408:2023 (E)****European foreword**

This document (EN 1408:2023) 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 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 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 polyDADMAC.

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.

**iTeh Standards**  
**(<https://standards.iteh.ai>)**  
**Document Preview**

[SIST EN 1408:2023](https://standards.iteh.ai/catalog/standards/sist/04f75c86-9bb9-4d66-ab45-359cc8d79723/sist-en-1408-2023)

<https://standards.iteh.ai/catalog/standards/sist/04f75c86-9bb9-4d66-ab45-359cc8d79723/sist-en-1408-2023>

**EN 1408:2023 (E)****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.

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)**

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.

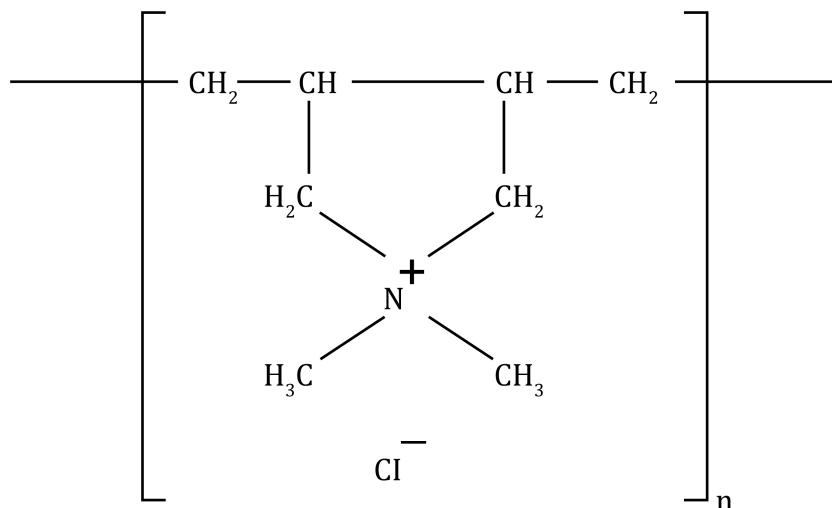


Figure 1 — Poly(diallyldimethylammonium chloride) chemical formula

where

$n$  is variable depending on the product. <https://standards.iteh.ai/> [1408:2023](https://standards.iteh.ai/catalog/standards/sist/04f75c86-9bb9-4d66-ab45-359cc8d79723/sist-en-1408-2023)

<https://standards.iteh.ai/catalog/standards/sist/04f75c86-9bb9-4d66-ab45-359cc8d79723/sist-en-1408-2023>

#### 4.1.6 CAS Registry Numbers <sup>1)</sup>

26062-79-3

#### 4.1.7 EINECS reference <sup>2)</sup>

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.

<sup>1)</sup> Chemical Abstracts Service Registry Number.

<sup>2)</sup> European Inventory of Existing Commercial Chemical Substances.

**EN 1408:2023 (E)****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).

**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 <sup>3)</sup>**

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

<sup>3)</sup> 100 kPa = 1 bar.