

norm**NEN-EN 935**

Chemicaliën voor de behandeling van water bestemd voor menselijke consumptie - Aluminiumijzer(III) chloride en aluminiumijzer(III) chloridehydroxide (monomeer)

Publicatie uitsluitend voor commentaar

Chemicals used for treatment of water intended for human consumption
- Aluminium iron(III) chloride (monomeric) and aluminium iron(III) chloride hydroxide (monomeric)

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English version

Chemicals used for treatment of water intended for human consumption - Aluminium iron(III) chloride (monomeric) and aluminium iron(III) chloride hydroxide (monomeric)

Produits chimiques utilisés pour le traitement de l'eau destinée à la consommation humaine - Chlorure et hydroxychlorure d'aluminium et de fer (III) (monomères)

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Foreword

This document (prEN 935:2003) 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 935:2001.

Significant technical differences between this edition and EN 935:2001 are as follows:

- a) deletion of the reference to EU Directive 80/778/EEC of July, 15 1980;
- b) expansion of annex A by addition of A.2 "quality of commercial product".

Annex A is informative.

Annex B is normative.

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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:

- a) 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;
- b) 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.

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Preview

1 Scope

This European Standard is applicable to aluminium iron(III) chloride (monomeric) and aluminium iron(III) chloride hydroxide (monomeric) used for treatment of water intended for human consumption. It describes the characteristics and specifies the requirements for aluminium iron(III) chloride (monomeric) and aluminium iron(III) chloride hydroxide (monomeric) and refers to the corresponding test methods. It also gives information on their use in water treatment.

NOTE Conformity with this 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.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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

- a) Aluminium iron(III) chloride (monomeric);
- b) Aluminium iron(III) chloride hydroxide (monomeric).

3.1.2 Synonym or common names

For aluminium iron(III) chloride hydroxide (monomeric): bauxite or clay hydroxide chloride.

3.1.3 Relative molecular mass

Variable (see 3.1.4).

3.1.4 Empirical formula

$\text{Al}_x\text{Fe}_{1-x}(\text{OH})_a\text{Cl}_b$ with $(a + b) = 3$ and

$x = 0,67$ to $0,99$ for aluminium iron chlorides

$x = 0,80$ to $0,99$ for aluminium iron chloride hydroxides

$a = 0$ to $1,05$

$b = 3$ to $1,95$

$a = 0$ for aluminium iron(III) chloride (monomeric) products, and these products normally have a detectable free acidity (see 5.2).

3.1.5 Chemical formula

Variable (see 3.1.4).

3.1.6 CAS Registry Number¹⁾

The following is a list of CAS Registry Numbers for products or their components.

AlCl_3 : 7446-70-0.

FeCl_3 : 7705-08-0.

$\text{Al}(\text{OH})_a\text{Cl}_b$: 1327-41-9 with $(a + b) = 3$ and a less than $1,05$.

$\text{Al}(\text{OH})\text{Cl}_2$: 14215-15-7.

3.1.7 EINECS reference²⁾

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

AlCl_3 : 231-208-1.

FeCl_3 : 231-729-4.

$\text{Al}(\text{OH})_a\text{Cl}_b$: 215-477-2.

$\text{Al}(\text{OH})\text{Cl}_2$: 238-071-7.

3.2 Commercial form

The products are available as liquids.

3.3 Physical properties

3.3.1 Appearance

The products are yellow to brown liquids.

1) Chemical Abstracts Service Registry Number.

2) European inventory of Existing Commercial chemical Substances.

3.3.2 Density

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

Typical value : 1,3 g/ml for Al 5,3 % .

3.3.3 Solubility in water

Aluminium iron(II) chloride (monomeric) and aluminium iron(III) chloride hydroxide (monomeric) are fully miscible with water.

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

3.3.4 Vapour pressure at 20 °C

Not known.

3.3.5 Boiling point at 100 kPa³⁾

Not known.

3.3.6 Crystallization point

Typical value is - 20 °C for Al 5,3 % .

3.3.7 Specific heat

Not known.

3.3.8 Viscosity (dynamic)

Typical value is 20 mPa·s for Al 5,3 % at 20 °C.

3.3.9 Critical temperature

Not applicable.

3.3.10 Critical pressure

Not applicable.

3.3.11 Physical hardness

Not applicable.

3) 100 kPa = 1 bar.

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