



SLOVENSKI STANDARD

SIST EN 1421:2005

01-september-2005

Nadomešča:
SIST EN 1421:1999

Kemikalije, ki se uporabljajo za pripravo pitne vode – Amonijev klorid

Chemicals used for treatment of water intended for human consumption - Ammonium chloride

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Ammoniumchlorid

Produits chimiques pour le traitement de l'eau destinée à la consommation humaine - Chlorure d'ammonium

Ta slovenski standard je istoveten z: **EN 1421:2005**

ICS:

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

SIST EN 1421:2005 en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1421

June 2005

ICS 71.100.80

Supersedes EN 1421:1996

English version

Chemicals used for treatment of water intended for human consumption - Ammonium chloride

Produits chimiques pour le traitement de l'eau destinée à la consommation humaine - Chlorure d'ammonium

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Ammoniumchlorid

This European Standard was approved by CEN on 12 May 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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Contents

Page

Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Description	5
4 Purity criteria.....	8
Table 1 - Impurities	8
Table 2 – Chemical parameters	9
5 Test methods.....	9
6 Labelling – Transportation – Storage	11
Annex A (informative) General information on ammonium chloride	13
Annex B (normative) General rules relating to safety.....	14
Bibliography	15

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SIST EN 1421:2005

<https://standards.iteh.ai/catalog/standards/sist/ba708f19-520d-4ac2-9409-254d486907d8/sist-en-1421-2005>

Foreword

This European Standard (EN 1421:2005) 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 December 2005, and conflicting national standards shall be withdrawn at the latest by December 2005.

This document supersedes EN 1421:1996.

Significant technical differences between this edition and EN 1421:1996 are as follows:

- a) deletion of the reference to EU Directive 80/778/EEC of 15 July 1980 in order to take account of the latest Directive in force (see [1]).
- b) taking into account the new EU Directive 98/83/EC;
- c) replacement of ISO 5666-1 by EN 1483 and of EN 26595 by EN ISO 11969;
- d) introduction of EN ISO 11885 for the determination of antimony;
- e) introduction of Annex B for general rules relating to safety.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, 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:

- 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.

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.

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1 Scope

This European Standard is applicable to ammonium chloride used for treatment of water intended for human consumption. It describes the characteristics and specifies the requirements of ammonium chloride and refers to the corresponding analytical methods. It gives information for its use in water treatment. It also determines the rules relating to safe handling and use of ammonium chloride (see Annex B).

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 reference document (including any amendments) applies.

EN 1233, *Water quality - Determination of chromium - Atomic absorption spectrometric methods*

EN 1483, *Water quality - Determination of mercury*

EN ISO 3696, *Water for analytical laboratory use - Specification and test methods* (ISO 3696:1987)

EN ISO 11885, *Water quality- Determination of 33 elements by inductively coupled plasma atomic emission spectroscopy*

EN ISO 11969, *Water quality - Determination of arsenic- Atomic absorption spectrometric method (hydride technique)* (ISO 11969:1996)

ISO 2762, *Hydrochloric acid for industrial use - Determination of soluble sulfates - Turbidimetric method*

ISO 3165, *Sampling of chemical products for industrial use - Safety in sampling*
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ISO 3332, *Ammonium sulfate for industrial use - Determination of ammoniacal nitrogen content - Titrimetric method after distillation*

ISO 6206, *Chemical products for industrial use - Sampling - Vocabulary*

ISO 6332, *Water quality - Determination of iron - Spectrometric method using 1,10-phenanthroline*

ISO 8213, *Chemical products for industrial use - Sampling techniques - Solid chemical products in the form of particles varying from powders to coarse lumps*

ISO 8288:1986, *Water quality - Determination of cobalt, nickel, copper, zinc, cadmium and lead - Flame atomic absorption spectrometric methods*

ISO 9965, *Water quality - Determination of selenium - Atomic absorption spectrometric method (hydride technique)*

3 Description

3.1 Identification

3.1.1 Chemical name

Ammonium chloride.

EN 1421:2005 (E)**3.1.2 Synonym or common name**

Sal-ammoniac.

3.1.3 Relative molecular mass

53,5.

3.1.4 Empirical formula

NH₄Cl.

3.1.5 Chemical formula

NH₄Cl.

3.1.6 CAS Registry Number ¹⁾

12125-02-9.

3.1.7 EINECS reference²⁾

235-186-4.

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3.2 Commercial form

Ammonium chloride is available as a powder.

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3.3 Physical properties**3.3.1 Appearance and odour**

The product is a white powder or white crystals, without any odour.

3.3.2 Density

The density of the product is 1,53 g/cm³ at 20 °C.

The bulk density is 0,6 g/cm³ to 1 g/cm³ depending on particle size.

¹⁾ Chemical Abstracts Service Registry Number.

²⁾ European Inventory of Existing Commercial Chemical Substances.

3.3.3 Solubility in water

The solubility of the product in the water at 20 °C is 374 g/l.

The solubility of the product in the water at 50 °C is 504 g/l.

NOTE Dissolution of NH_4Cl in water is a strongly endothermic reaction and the resulting decrease in temperature can lead to crystallization.

3.3.4 Vapour pressure

100 Pa at 160 °C.

3.3.5 Boiling point at 100 kPa³⁾

Not applicable.

3.3.6 Melting point

Sublimation at 338 °C.

3.3.7 Specific heat

Not known.

3.3.8 Viscosity

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

The pH value of an aqueous solution of mass fraction of 5 % is 4 to 6.

Ammonium chloride attacks metals, e.g. iron, copper, nickel, zinc.

Reaction with strong acids can generate hydrochloric acid gas; reaction with strong alkalis can generate ammonia gas.

³⁾ 100 kPa = 1 bar.

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