



**SLOVENSKI STANDARD**  
**SIST EN 12123:2000**  
**01-november-2000**

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**Kemikalije, ki se uporabljajo za pripravo pitne vode - Amonijev sulfat**

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

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Ammoniumsulfat

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

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**Ta slovenski standard je istoveten z: EN 12123:1998**

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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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**en**

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EUROPEAN STANDARD

EN 12123

NORME EUROPÉENNE

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ICS 13.060.20; 71.060.50; 71.100.80

Descriptors: potable water, water treatment, chemical compounds, ammonium sulfite, description, physical properties, chemical properties, impurities, toxic substances, tests, conditioning, marking, storage, labelling

English version

## Chemicals used for treatment of water intended for human consumption - Ammonium sulfate

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

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Ammoniumsulfat

This European Standard was approved by CEN on 5 September 1998.

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.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This European Standard 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 March 1999, and conflicting national standards shall be withdrawn at the latest by March 1999.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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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 Standard :

- 1) this 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 ;
- 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.

## 1 Scope

This European standard is applicable to ammonium sulfate used for treatment of water intended for human consumption. It describes the characteristics of ammonium sulfate and specifies the requirements and the corresponding test methods for ammonium sulfate. It gives information on its use in water treatment.

## 2 Normative references

This present 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.

EN ISO 3696	Water for analytical laboratory use - Specification and test methods (ISO 3696:1987)
ISO 760	Determination of water - Karl Fischer Method (General method)
ISO 2992	Ammonium sulfate for industrial use - Determination of iron content -2,2'-bipyridyl photometric method
ISO 2993	Ammonium sulphate for industrial use - Determination of free acidity - Titrimetric method
ISO 3165	Sampling of chemical products for industrial use - Safety in sampling
ISO 3332	Ammonium sulfate for industrial use - Determination of ammoniacal nitrogen content - Titrimetric method after distillation
ISO 5993	Sodium hydroxide for industrial use - Determination of mercury content flameless atomic absorption spectrometric method
ISO 6206	Chemical products for industrial use - Sampling - Vocabulary
ISO 6353-1	Reagents for chemical analysis - Part 1 : General test methods
ISO 8213	Chemical products for industrial use - Sampling techniques - Solid chemical products in the form of particles varying from powders to coarse lumps

### 3 Description

#### 3.1 Identification

##### 3.1.1 Chemical name

Ammonium sulfate.

##### 3.1.2 Synonym or common name

Ammonium sulfate.

##### 3.1.3 Relative molecular mass

132,14.

##### 3.1.4 Empirical formula

$(\text{NH}_4)_2\text{SO}_4$ .

##### 3.1.5 Chemical formula

$(\text{NH}_4)_2\text{SO}_4$ .

##### 3.1.6 CAS-Registry Number<sup>1)</sup>

7783-20-2.

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

213-984-1.

#### 3.2 Commercial form

Powder.

#### 3.3 Physical properties

##### 3.3.1 Appearance

The product is a white, fine crystalline powder.

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

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

### 3.3.2 Density

The density of the product is 1,8 g/cm<sup>3</sup> at 20 °C.

### 3.3.3 Solubility

The solubility of the product in water is 767 g/l at 25 °C.

### 3.3.4 Vapour pressure

Not applicable.

### 3.3.5 Boiling point at 100 kPa<sup>3)</sup>

Not applicable.

### 3.3.6 Crystallisation point

The product decomposes above 235 °C.

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### 3.3.7 Specific heat

Not known.

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### 3.3.8 Viscosity, dynamic

Not applicable.

### 3.3.9 Critical temperature

Not applicable.

### 3.3.10 Critical pressure

Not applicable.

### 3.3.11 Physical hardness

Not applicable.

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



### 3.4 Chemical properties

Ammonium sulfate easily dissolves in water. A saturated solution (706 g/l at 0 °C) has a pH value of approximately 6.

Upon heating with chlorates, nitrates or nitrites it reacts violently.

Above 235 °C the product decomposes with formation of ammonia vapour, sulfur oxides.

## 4 Purity criteria

Limits have been given for impurities and toxic substances where these are likely to be present in significant quantities from the current production process and raw materials. If a change in the production process or raw materials leads to significant quantities of other impurities or by-products being present, this shall be notified to the user.

### 4.1 Composition of commercial product

The content of ammonium sulfate shall not be less than 99 % (*m/m*) corresponding to 21 % (*m/m*) ammoniacal nitrogen (NH<sub>3</sub>-N)

### 4.2 Impurities and main by-products

The product shall conform to the requirements specified in table 1.

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Table 1 : Impurities  
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Impurity		Limit in mg/kg of the product
Sulfuric acid (free) H <sub>2</sub> SO <sub>4</sub>	max.	200
Water	max.	300
Iron (Fe)	max.	10

### 4.3 Toxic substances

NOTE : For the purpose of this standard, "toxic substances" are those defined in the EU Directive 80/778/EEC of 15 July 1980 (see B.1).

The content of toxic substances shall conform to the requirements specified in table 2.