SLOVENSKI STANDARD
SIST EN 12912:2000

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Proizvodi, ki se uporabljajo za pripravo pitne vode - Barit

Products used for treatment of water intended for human consumption - Barite

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Baryt

Produits utilisés pour le traitement de l'eau destinée a la consommation humaine - Baryte

Ta slovenski standard je istoveten z: EN 12912:1999

ICS:

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

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EUROPEAN STANDARD
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English version

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This European Standard was approved by CEN on 16 July 1999.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Contents

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of an identical text or by endorsement, at the latest by February 2000, and conflicting national standards shall be withdrawn at the latest by February 2000.

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.

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 barite used for treatment of water intended for human consumption. It describes the characteristics of barite and specifies the requirements and the corresponding test methods for barite and gives information on its use in water treatment.

2 Normative references

This European Standard incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate place 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 12901, *Products used for treatment of water intended for human consumption - Inorganic supporting and filtering materials – Definitions.*

EN 12902, *Products used for treatment of water intended for human consumption - Inorganic supporting and filtering materials - Methods of test.*

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

3 Definitions and symbols

For the purpose of this standard, the definitions and symbols given in EN 12901 apply.

4 Description

4.1 Identification

4.1.1 Chemical name

Barium sulfate.

4.1.2 Synonym and common names

Barite, baryte, heavy spar, tiff, cawk.

4.1.3 Chemical formula

$BaSO_4$.

4.1.4 CAS Registry number[1)]

13462-86-7.

[1)] Chemical Abstracts Service Registry Number.

4.1.5 EINECS reference[2)]

236-664-5.

4.2 Commercial form

Barite according to this standard is available in different particle size ranges.

5 Physical properties

5.1 Appearance

White to yellowish, and various light shades; lustre vitreous. Angular shape, crystalline structure.

The product shall be generally homogeneous and shall be visibly free of extraneous matter.

5.2 Particle size distribution

The particle size distribution shall be determined on samples taken at the point of manufacture using the method of test given in EN 12902.

NOTE The particle size can decrease during transportation and handling.

The particle size distribution shall be described by either :

— a) effective size, d_{10}, with a permitted tolerance of ± 5% ;

uniformity coefficient, U, which shall be less than 1,5 ;

minimum size, d_1, with a permitted tolerance of ± 5% ;

or :

— b) by particle size range and by mass of oversize and undersize particles according to application.

The maximum permitted contents of oversize and undersize are 5% (*m/m*) for application of the product as a filtration layer in multi media filters and 10% (*m/m*) for use in single media filters. For use as a support layer, maximum contents of oversize and undersize of 15% (*m/m*) are acceptable. See A.2.3 for examples of available particle sizes that are used.

NOTE Other values can be necessary for certain applications.

5.3 Density

5.3.1 Bulk density loose

The bulk density loose shall be in the range of 2 200 kg/m^3 to 2 400 kg/m^3.

5.3.2 Bulk density packed

The bulk density packed shall be in the range of 2 500 kg/m^3 to 2 600 kg/m^3.

[2)] European Inventory of Existing Commercial Chemical Substances.

6 Chemical properties

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

Table 1 - Composition of commercial product

Parameter		Limit in % (*m/m*) of the product
Barium sulfate	min.	92
Acid-soluble material	max.	3

NOTE 1 The contents of $BaSO_4$ and acid-soluble material do not influence filtration properties but give information about the source of barite.

NOTE 2 After filling, washing and commissioning of a filter system producing drinking water, barite should not increase the content of toxic substances. For the purpose of this standard, "toxic substances" are those defined in the EEC Directive 80/778/EEC of July 15, 1980 (See [1]).

NOTE 3 Water extractable toxic substances determined in accordance with the method for granular materials given in EN 12902 can be used to estimate the leaching of toxic substances.

7 Test methods

7.1 Sampling

Prepare the laboratory sample(s) required by the relevant procedures described in EN 12902.

7.2 Analysis

7.2.1 Particle size distribution

The particle size distribution shall be determined in accordance with EN 12902.

7.2.2 Bulk density loose

The bulk density loose shall be determined in accordance with EN 12902.

7.2.3 Bulk density packed

The bulk density packed shall be determined in accordance with EN 12902.

7.2.4 Main product - barium sulfate

7.2.4.1 Principle

Melting of mineral with sodium carbonate followed by disintegration in water and filtration to recover water insoluble carbonates. The solid is treated with hydrochloric acid solution and the acid insoluble fraction is filtered off.

Barium sulfate is precipitated by addition of ammonium sulfate solution and gravimetrically determined.

7.2.4.2 Reagents

All reagents shall be of recognized analytical grade and the water used shall conform to grade 3 in accordance with EN ISO 3696.

7.2.4.2.1 Ammonium hydroxide solution, NH_4OH ρ = 0,9 g/ml.