SLOVENSKI STANDARD
SIST EN 12911:2000

01-november-2000

Proizvodi, ki se uporabljajo za pripravo pitne vode - Glavkonit

Products used for treatment of water intended for human consumption - Manganese Greensand

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Mangangrünsand

Produits utilisés pour le traitement de l'eau destinée à la consommation humaine - sable vert manganisé

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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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EUROPEAN STANDARD
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English version

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Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Mangangrünsand

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

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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of an identical text or by endorsement, at the latest by February 2000, and conflicting national standards shall be withdrawn at the latest by February 2000.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 manganese greensand used for treatment of water intended for human consumption. It describes the characteristics of manganese greensand and specifies the requirements and the corresponding test methods for manganese greensand. It gives information on its use in water treatment.

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.

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).*

ISO 6333, *Water quality - Determination of manganese - Formaldoxime spectrometric method.*

ISO 9682-1:1991, *Iron ores - Determination of manganese content - Part 1 : Flame atomic absorption spectrometric method.*

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(s

Manganese oxide coated zeolite (Glauconite).

NOTE The product is a preparation.

4.1.2 Synonym or common names

Manganese greensand, manganese zeolite, ferro-sand, greensand.

4.1.3 Chemical formula

Not applicable.

4.1.4 CAS Registry number [1)]

Glauconite : 90387-66-9

[1)] Chemical Abstracts Service Registry Number.

Manganese oxide : 1313-13-9

4.1.5 EINECS reference [2)]

Glauconite : 291-341-6

Manganese oxide : 215-202-6

4.2 Commercial form

Manganese greensand is a granular product available in only one particle size range.

5 Physical properties

5.1 Appearance

Dry, sand-like, free flowing black granules. The particles are coated with a black manganese dioxide coating. Granular shape, dense crystalline structure, rough texture.

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}, 0,33 mm with a permitted tolerance of ± 0,03 mm;

uniformity coefficient, U, which shall be less than 1,6;

minimum size, d_1, which shall be at least 0,25 mm;

maximum size, which shall not exceed 1,00 mm;

or

b) by particle size range and by mass of oversize and undersize particles.

The maximum permitted contents of oversize and undersize are 5% (m/m).

NOTE Other values can be necessary for certain applications.

5.3 Density

5.3.1 Bulk density loose

The bulk density loose shall be at least 1 300 kg/m^3.

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

5.3.2 Bulk density packed

The bulk density packed shall be at least 1 400 kg/m^3.

6 Chemical properties

The composition of the commercial product shall conform to Table 1.

Table 1 - Composition of commercial product

Parameters		Limit in % (*m/m*) of the product
Manganese oxides (as Mn) [a)]		0,2 to 0,8
Mass loss at 150 °C	max.	6
Ignition loss at 650 °C	max.	8
[a)] The manganese in the product is present as a mixture of different oxides.		

NOTE 1 Acid-soluble material is not a relevant parameter for this product which is not stable to acids and which will react with hydrochloric acid releasing chlorine gas.

NOTE 2 After filling, washing and commissioning of a filter system producing drinking water, manganese greensand should not increase the content of toxic substances. For the purpose of this standard, "toxic substances" are those defined in the EU 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 Specific properties

The oxidation capacity of manganese greensand (regenerated form), expressed as grams of Mn per litre of packed product, shall be at least 0,7 g/l.

8 Test methods

8.1 Sampling

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

8.2 Analysis

8.2.1 Particle size distribution

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

8.2.2 Bulk density loose

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

8.2.3 Bulk density packed

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