SLOVENSKI STANDARD
kSIST FprEN 14368:2014

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Proizvodi za pripravo pitne vode - Apnenec, prevlečen z manganovim dioksidom

Products used for treatment of water intended for human consumption - Manganese dioxide coated limestone

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Mit Mangandioxid beschichteter Kalkstein

Produits utilisés pour le traitement de l'eau destinée à la consommation humaine - Carbonate de calcium revêtu de dioxyde de manganèse

Ta slovenski standard je istoveten z: **FprEN 14368**

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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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FINAL DRAFT
FprEN 14368

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ICS 71.100.80

Will supersede EN 14368:2003

English Version

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Foreword

This document (FprEN 14368:2014) 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 Unique Acceptance Procedure.

This document will supersede EN 14368:2003.

The main technical difference between this edition and EN 14368:2003 is the updating of 9.2 in line with current legislation.

Introduction

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by this standard:

a) 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;

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 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.

1 Scope

This European Standard is applicable to manganese dioxide coated limestone used for treatment of water intended for human consumption. It describes the characteristics of manganese dioxide coated limestone and specifies the requirements and the corresponding test methods for manganese dioxide coated limestone. It gives information on its use in water treatment.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1018, *Chemicals used for treatment of water intended for human consumption - Calcium carbonate*

EN 12901:1999, *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 13752, *Products used for treatment of water intended for human consumption - Manganese dioxide*

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

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

3 Terms, definitions and symbols

For the purposes of this document, the terms, definitions and symbols given in EN 12901:1999 apply.

4 Description

4.1 Identification

4.1.1 Chemical name

Manganese dioxide on limestone support material.

4.1.2 Synonyms or common names

Manganese (IV) oxide, pyrolusite on limestone support material.

4.1.3 Chemical formula

MnO_2 and $CaCO_3$.

4.1.4 CAS Registry number[1)]

Manganese dioxide: 1313-13-9.

Calcium carbonate: 471-34-1.

4.1.5 EINECS reference[2)]

Manganese dioxide: 215-202-6.

Calcium carbonate: 207-439-9.

4.2 Commercial form

Manganese dioxide coated limestone is a granular material available in different particle size ranges.

5 Physical properties

5.1 Appearance

The product is a granular material varying in colour from dark grey to black.

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 described by either:

a)

— effective size: (d_{10}) with a maximum deviation of ± 5 %;

— uniformity coefficient: (U) less than 2,0;

— minimum size: (d_1) with a maximum deviation of ± 5 %.

or

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

The maximum contents of oversize and undersize shall be a mass fraction of 5 % for the application of the product in multimedia filters and a mass fraction of 10 % for use in single media filters. See A.2.3 for examples of available particle sizes that are used.

NOTE 1 The particle size can decrease during transportation and handling.

NOTE 2 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 1 500 kg/m^3 to 1 700 kg/m^3.

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1) Chemical Abstracts Service Registry Number.

2) European Inventory of Existing Commercial Chemical Substances.

5.3.2 Bulk density packed

The bulk density packed shall be in the range of 1 700 kg/m^3 to 1 900 kg/m^3.

6 Chemical properties

This European Standard specifies the minimum purity requirements for manganese dioxide coated limestone used for the treatment of water intended for human consumption. Limits are given for impurities commonly present in the product. Depending on the raw material and the manufacturing process other impurities may be present and, if so, this shall be notified to the user and when necessary to relevant authorities.

NOTE 1 Users of this product should satisfy themselves that it is of appropriate purity for treatment of water intended for human consumption, taking into account raw water quality, contents of other impurities and additives used in the products not stated in the product standard, and other relevant factors.

Limits have been given for impurities and chemical parameters where these are likely to be present in significant quantities from the current production process and raw materials. If the production process or raw materials lead to significant quantities of impurities, by-products or additives being present, this shall be notified to the user.

The chemical composition of the product is not relevant to its performance. The chemical composition of the components is given in EN 1018 and EN 13752.

After filling, washing and commissioning of a filter system producing drinking water, manganese dioxide coated limestone should not increase the concentrations of chemical parameters (see [1]).

NOTE 2 Water extractable substances, determined in accordance with the method for granular materials given in EN 12902, can be used to estimate the leaching of the chemicals specified in EN 12902.

7 Specific properties

The oxidation capacity shall be at least 500 bed volumes when tested according to the method described in 8.2.4.

8 Test methods

8.1 Sampling

Prepare the laboratory sample required by the relevant procedure described in EN 12902.

8.2 Analysis

8.2.1 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.

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.