

SVENSK STANDARD

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Processkemikalier för beredning av dricksvatten – Mangandioxid

**Chemicals used for treatment of water intended for human
consumption – Manganese dioxide**



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Denna standard ersätter SS-EN 13752:2009, utgåva 2.

The European Standard EN 13752:2012 has the status of a Swedish Standard. This document contains the official version of EN 13752:2012.

This standard supersedes the Swedish Standard SS-EN 13752:2009, edition 2.

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Denna standard är framtagen av kommittén för Vattenreningskemikalier och industrikalk, SIS/TK 431.

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EUROPEAN STANDARD

EN 13752

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2012

ICS 71.100.80

Supersedes EN 13752:2009

English Version

Chemicals used for treatment of water intended for human consumption - Manganese dioxide

Produits chimiques utilisés pour le traitement de l'eau destinée à la consommation humaine - Dioxyde de manganèse

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Mangandioxid

This European Standard was approved by CEN on 13 July 2012.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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Foreword

This document (EN 13752:2012) 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of an identical text or by endorsement, at the latest by February 2013, and conflicting national standards shall be withdrawn at the latest by February 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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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 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 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 used for treatment of water intended for human consumption. It describes the characteristics of manganese dioxide and specifies the requirements and the corresponding test methods for manganese dioxide. It gives information on its use in water treatment. Two classes of product are specified: Class 1 with hardness greater than or equal to 6 Mohs, Class 2 with hardness less than 6 Mohs.

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 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 ISO 385, *Laboratory glassware – Burettes (ISO 385)*

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.

4.1.2 Synonym or common names

Manganese(IV) oxide, pyrolusite.

4.1.3 Chemical formula

MnO₂.

NOTE Manganese dioxide used as a catalytic filtering medium is a natural ore, usually pyrolusite. Manganese dioxide ores differ widely in their chemical composition depending on their origin. Most are composed of manganese dioxide together with silica, alumina, iron oxide and numerous other elements present in varying proportions which might affect mechanical strength.

4.1.4 CAS Registry number ¹⁾

Manganese dioxide: 1313-13-9.

4.1.5 EINECS reference ²⁾

Manganese dioxide: 215-202-6.

4.2 Commercial form

Manganese dioxide is a granular material usually available in three size ranges: 0,355 mm to 0,850 mm, 0,50 mm to 1,00 mm and 0,5 mm to 3,00 mm.

5 Physical properties

5.1 Appearance

The product is a granular material varying in colour from dark brown to dark grey to black, depending upon its origin. It consists of amorphous grains which can be rounded or sub-angular.

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 $\pm 5\%$;
- uniformity coefficient: (U) less than 1,5 for Class 1 and Class 2 products with particles smaller than or equal to 1 mm; and less than 2,5 for Class 1 and Class 2 products with particles greater than 1 mm.
- minimum size: (d_1) with a limit deviation of $\pm 5\%$;

NOTE The particle size can decrease during transportation and handling.

b) or, 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 10 % for application of the product in multimedia filters and a mass fraction of 5 % for use in single media filters. See A.2.3 for examples of available particle sizes that are used.

Other values can be necessary for certain applications.

1) Chemical Abstracts Service Registry Number.

2) European Inventory of Existing Commercial Chemical Substances.