SLOVENSKI STANDARD
SIST EN 15029:2013

01-maj-2013

Nadomešča:
SIST EN 15029:2006

Proizvodi, ki se uporabljajo za pripravo pitne vode - Železov (III) hidroksid-oksid

Products used for treatment of water intended for human consumption - Iron (III) hydroxide oxide

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Eisen(III) hydroxidoxid

Produits utilisés pour le traitement de l'eau destinée à la consommation humaine - Oxyde hydroxyde de fer (III)

Ta slovenski standard je istoveten z: **EN 15029:2012**

ICS:

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

SIST EN 15029:2013 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 15029

November 2012

ICS 71.100.80

Supersedes EN 15029:2006

English Version

Products used for treatment of water intended for human consumption - Iron (III) hydroxide oxide

Produits utilisés pour le traitement de l'eau destinée à la consommation humaine - Oxyde hydroxyde de fer (III)

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Eisen(III)hydroxidoxid

This European Standard was approved by CEN on 9 September 2012.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 15029:2012) 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of an identical text or by endorsement, at the latest by May 2013, and conflicting national standards shall be withdrawn at the latest by May 2013.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.

This document supersedes EN 15029:2006.

The significant technical difference between this edition and EN 15029:2006 is as follows:

— Updating of 9.2 in line with current legislation.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey 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 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 the European 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 iron (III) hydroxide oxide used for the treatment of water intended for human consumption. It describes the characteristics of iron (III) hydroxide oxide and specifies the requirements and the corresponding test methods for iron (III) hydroxide oxide. 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 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*

ISO 9277, *Determination of the specific surface area of solids by gas adsorption — BET 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(s)

Iron (III) hydroxide, iron hydroxide oxide.

4.1.2 Synonym or common names

Granular ferric hydroxide, granulated iron oxide, granulated iron oxide hydroxide, synthetic iron oxide, synthetic iron oxide hydroxide, Goethite, Akaganeite.

4.1.3 Chemical formula

$Fe(OH)_3$, FeOOH.

4.1.4 CAS Registry Number [1)]

Iron hydroxide oxide: 51274-00-1.

1) Chemical Abstracts Service Registry Number.

4.1.5 EINECS Reference [2)]

Iron hydroxide oxide: 257-098-5.

4.2 Commercial form

Iron (III) hydroxide oxide is a granular product consisting of irregularly shaped (non-moulded) particles; the product is available in different particle sizes. The water content is a mass fraction of up to 50 %.

5 Physical properties

5.1 Appearance

The product consists of black to brown granular material with particles of irregular shape. 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 2,1;

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

or

b) particle size range and mass fraction of oversize and undersize particles; see A.2.2.1.

The proportion of oversize plus undersize particles shall not exceed a mass fraction of 20 % and not more than a mass fraction of 10 % shall be undersized.

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

NOTE 2 Other values can be necessary for certain applications.

5.3 Density

The bulk density (loose) shall be within ± 10 % of the value specified by the manufacturer or supplier.

The bed density (backwashed and drained) should be in the range of 500 kg/m^3 to 1 800 kg/m^3.

6 Chemical properties

This European Standard specifies the minimum purity requirements for iron (III) hydroxide oxide 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.

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2) European Inventory of Existing Commercial Chemical Substances.

Users of this product should check the national regulations in order to clarify whether 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 this product standard.

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.

After filling, washing and commissioning of a filter system producing drinking water, iron (III) hydroxide oxide should not increase the concentrations of chemical parameters (see [1]).

NOTE 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 surface area shall be not less than 100 m^2/g.

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 on samples taken at the point of manufacture in accordance with the method of test given EN 12902, using wet sieving.

8.2.2 Bulk density loose

The bulk density loose shall be determined in accordance with EN 12902, without drying the sample, which could lead to a reduced volume.

8.2.3 Surface area

The surface area shall be determined by the BET method, degassing at a maximum of 200 °C, in accordance with ISO 9277.

9 Labelling, transportation and storage

9.1 Means of delivery

Iron (III) hydroxide oxide shall be delivered in bulk, in semi-bulk containers, big bags or in drums of plastics-lined cardboard, plastics or steel or suitable bags of various sizes.

NOTE In case of dry iron (III) hydroxide oxide, cardboard drums without plastics-lining can be used.

In order that the purity of the product is not affected, the means of delivery shall not have been used previously for any different product or it shall have been specially cleaned and prepared before use.