
Izdelki, ki se uporabljajo za pripravo pitne vode – Aktivni aluminijev oksid v zrnih

Products used for treatment of water intended for human consumption - Granular activated alumina

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Granuliertes aktiviertes Aluminiumoxid

Produits utilisés pour le traitement de l'eau destinée à la consommation humaine - Alumine active en grains

iTeh STANDARD PREVIEW
(standards.itteh.ai)

[SIST EN 13753:2003](https://standards.itteh.ai/catalog/standards/sist/9d474c0d-b10d-4fb7-8336-38a9a2258c89/sist-en-13753-2003)

Ta slovenski standard je istoveten z: EN 13753:2002

<https://standards.itteh.ai/catalog/standards/sist/9d474c0d-b10d-4fb7-8336-38a9a2258c89/sist-en-13753-2003>

ICS:

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

SIST EN 13753:2003

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 13753:2003

<https://standards.iteh.ai/catalog/standards/sist/9d474c0d-b10d-4fb7-8336-38a9a2258c89/sist-en-13753-2003>

EUROPEAN STANDARD

EN 13753

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2002

ICS 71.100.80

English version

Products used for treatment of water intended for human consumption - Granular activated alumina

Produits utilisés pour le traitement de l'eau destinée à la consommation humaine - Alumine active en grains

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Granuliertes aktiviertes Aluminiumoxid

This European Standard was approved by CEN on 23 October 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

[SIST EN 13753:2003](https://standards.iteh.ai/catalog/standards/sist/9d474c0d-b10d-4fb7-8336-38a9a2258c89/sist-en-13753-2003)

<https://standards.iteh.ai/catalog/standards/sist/9d474c0d-b10d-4fb7-8336-38a9a2258c89/sist-en-13753-2003>



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

	page
Foreword	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms, definitions and symbols	5
4 Description	5
4.1 Identification	5
4.2 Commercial form	6
5 Physical properties	6
5.1 Appearance	6
5.2 Particle size distribution	6
5.3 Bulk density packed	6
6 Chemical properties	6
7 Specific properties	7
8 Test methods	7
8.1 Sampling	7
8.2 Analysis	7
9 Labelling, transportation and storage	7
9.1 Means of delivery	7
9.2 Risk and safety labelling according to the EU Directives	7
9.3 Transportation regulations and labelling	7
9.4 Marking	8
9.5 Storage	8
Annex A (informative) General information on granular activated alumina	9
Bibliography	12

ITeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 13753:2003](https://standards.iteh.ai/catalog/standards/sist/9d474c0d-b10d-4fb7-8336-38a9a2258c89/sist-en-13753-2003)

<https://standards.iteh.ai/catalog/standards/sist/9d474c0d-b10d-4fb7-8336-38a9a2258c89/sist-en-13753-2003>

Foreword

This document (EN 13753:2002) 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 June 2003, and conflicting national standards shall be withdrawn at the latest by June 2003.

Annex A is informative.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 13753:2003](https://standards.iteh.ai/catalog/standards/sist/9d474c0d-b10d-4fb7-8336-38a9a2258c89/sist-en-13753-2003)

<https://standards.iteh.ai/catalog/standards/sist/9d474c0d-b10d-4fb7-8336-38a9a2258c89/sist-en-13753-2003>

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.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 13753:2003](https://standards.iteh.ai/catalog/standards/sist/9d474c0d-b10d-4fb7-8336-38a9a2258c89/sist-en-13753-2003)

<https://standards.iteh.ai/catalog/standards/sist/9d474c0d-b10d-4fb7-8336-38a9a2258c89/sist-en-13753-2003>

1 Scope

This European Standard is applicable to granular activated alumina used for treatment of water intended for human consumption. It describes the characteristics of granular activated alumina and specifies the requirements and the corresponding test methods for granular activated alumina. 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 (including amendments).

EN 12901, *Products used for the treatment of water intended for human consumption – Inorganic supporting and filtering materials – Definitions.*

EN 12902, *Products used for the 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 using the BET method.*

iTeh STANDARD PREVIEW (standards.iteh.ai)

3 Terms, definitions and symbols

For the purposes of this European Standard, the terms, definitions and symbols given in EN 12901 and the following term and definition apply.

[SIST EN 13753:2003](#)

<https://standards.iteh.ai/catalog/standards/sist/9d474c0d-b10d-4fb7-8336-38a9a2258c89/sist-en-13753-2003>

3.1

activated alumina

virgin alumina that has not been used and has not been regenerated

4 Description

4.1 Identification

4.1.1 Chemical name

Aluminium oxide (partially hydroxylated).

4.1.2 Synonym or common names

Transition alumina; gamma alumina; alumina ; aluminium oxide; activated alumina.

4.1.3 Chemical formula

$\text{Al}_2\text{O}_{(3-x)}(\text{OH})_{2x}$ x varies from approximately 0 to 0,80.

EN 13753:2002 (E)

4.1.4 CAS Registry number¹⁾

1344 - 28 - 1.

4.1.5 EINECS reference²⁾

215 - 691 - 6.

4.2 Commercial form

Activated alumina recommended for use in drinking water treatment is a granular product consisting of irregularly shaped (non-moulded) particles; the product is available in different particle sizes.

5 Physical properties

5.1 Appearance

The product consists of white 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 limit deviation of ± 5 %;
- uniformity coefficient (U) less than 1.5;
- minimum size (d_1) with a limit deviation of ± 5 %;

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

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

The proportion of oversize plus undersize particles shall not exceed a mass fraction of 15 % and not more than a mass fraction of 5 % shall be undersized.

NOTE 2 Other values can be necessary for certain applications.

5.3 Bulk density packed

The bulk density (packed) shall be greater than 600 kg/m³.

6 Chemical properties

NOTE 1 After filling, washing and commissioning of a filter system producing drinking water, activated alumina should not increase the concentrations of chemical parameters above the regulated values (see [1]).

¹⁾ Chemical Abstracts Service Registry Number.

²⁾ European Inventory of Existing Commercial Chemical Substances.

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 surface area shall be not less than 200 m²/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 using the method of test given in EN 12902.

8.2.2 Bulk density packed

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

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

Granular activated alumina shall be delivered in bulk (dry or wet product), in semi-bulk containers or in drums of cardboard, plastics or steel or suitable bags of various sizes.

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.

9.2 Risk and safety labelling according to the EU Directives³⁾

Activated alumina is not listed as a dangerous substance.

9.3 Transportation regulations and labelling

Activated alumina is not classified as dangerous for transportation by road, rail, sea or air. Activated alumina is not listed under a UN number⁴⁾.

³⁾ See [2].

⁴⁾ United Nations number.