

# **SLOVENSKI STANDARD**

## **SIST EN 12915-2:2003**

**01-oktober-2003**

**Nadomešča:**  
**SIST EN 12915:2000**

---

**Izdelki, ki se uporabljajo za pripravo pitne vode – Aktivno oglje v zrnih - 2. del:**  
**Reaktivirano aktivno oglje v zrnih**

Products used for the treatment of water intended for human consumption - Granular activated carbon - Part 2: Reactivated granular activated carbon

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Granulierte Aktivkohle - Teil 2: Reaktivierte granulierte Aktivkohle

Produits utilisés pour le traitement de l'eau destinée à la consommation humaine - Charbon actif en grains - Partie 2: Charbon actif en grains réactive

**Ta slovenski standard je istoveten z: EN 12915-2:2003**

---

**ICS:**

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

**SIST EN 12915-2:2003**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 12915-2:2003

<https://standards.iteh.ai/catalog/standards/sist/84d9c0aa-f370-48ab-a9e4-5c8770341398/sist-en-12915-2-2003>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 12915-2**

April 2003

ICS 71.100.80

English version

**Products used for the treatment of water intended for human consumption - Granular activated carbon - Part 2: Reactivated granular activated carbon**

Produits utilisés pour le traitement de l'eau destinée à la consommation humaine - Charbon actif en grains - Partie 2: Charbon actif en grains réactivé

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Granulierte Aktivkohle - Teil 2: Reaktivierte granulierte Aktivkohle

This European Standard was approved by CEN on 14 February 2003.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

<https://standards.iteh.ai/catalog/standards/sist/84d9c0aa-f370-48ab-a9e4-5c8770341398/sist-en-12915-2-2003>



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 and definitions .....	5
4 Description .....	6
4.1 Identification .....	6
4.2 Commercial forms .....	6
5 Physical properties .....	6
5.1 General .....	6
5.2 Appearance .....	7
5.3 Particle size distribution .....	7
5.4 Wettability .....	7
5.5 Bulk density packed .....	7
5.6 Mechanical strength .....	7
6 Chemical properties .....	8
7 Specific properties .....	8
8 Test methods .....	8
8.1 Sampling .....	8
8.2 Analysis .....	8
9 Labelling, transportation and storage .....	9
9.1 Means of delivery .....	9
9.2 Risk and safety labelling according to the EU directives .....	9
9.3 Transportation regulations and labelling .....	9
9.4 Marking .....	9
9.5 Storage .....	9
Annex A (informative) General information on reactivated granular activated carbon .....	10
Bibliography .....	14

iTeh STANDARD PREVIEW  
(standards.iteh.ai)

SIST EN 12915-2:2003

[https://standards.iteh.ai/catalog/standards/sist/84d9c0aa-1370-48ab-a9c4-](https://standards.iteh.ai/catalog/standards/sist/84d9c0aa-1370-48ab-a9c4-5e8770341398/sist-en-12915-2-2003)

5e8770341398/sist-en-12915-2-2003

## Foreword

This document (EN 12915-2:2003) 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 October 2003, and conflicting national standards shall be withdrawn at the latest by October 2003.

This European Standard consists of two parts, Part 1 is concerned with virgin granular activated carbon and Part 2 gives requirements for reactivated granular activated carbon.

Annex A is informative.

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.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

[SIST EN 12915-2:2003  
https://standards.iteh.ai/catalog/standards/sist/84d9c0aa-f370-48ab-a9e4-5c8770341398/sist-en-12915-2-2003](https://standards.iteh.ai/catalog/standards/sist/84d9c0aa-f370-48ab-a9e4-5c8770341398/sist-en-12915-2-2003)

## 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.

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 12915-2:2003

<https://standards.iteh.ai/catalog/standards/sist/84d9c0aa-f370-48ab-a9e4-5c8770341398/sist-en-12915-2-2003>

## 1 Scope

This part of EN 12915 is applicable to reactivated granular activated carbon used for treatment of water intended for human consumption. It describes the characteristics of reactivated granular activated carbon and specifies the requirements and the corresponding test methods for reactivated granular activated carbon. 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 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 12915-1:2003, *Products used for the treatment of water intended for human consumption – Granular activated carbon - Part 1: Virgin granular activated carbon*.

## 3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 12901 and the following apply:

### 3.1

#### **virgin activated carbon**

freshly manufactured activated carbon that has not been used and has not been reactivated

[EN 12915-1:2003]

### 3.2

#### **wettability**

ability of granular activated carbon to be wetted when in contact with water, determined by measuring the quantity of material that sinks in water under specified conditions

[EN 12915-1:2003]

### 3.3

#### **spent granular activated carbon**

granular activated carbon with reduced adsorption capacity as a result of operational use

### 3.4

#### **reactivation**

process used to restore all or part of the adsorption capacity of spent granular activated carbon

NOTE The most common process is thermal reactivation but other methods can be used.

### 3.5

#### **reactivated granular activated carbon.**

spent granular activated carbon that has been subjected to reactivation

NOTE Usually, reactivated granular activated carbon is returned to the water treatment plant at which it was previously used. The delivered product can include make-up granular activated carbon and/or top-up granular activated carbon.

## EN 12915-2:2003 (E)

## 3.6

**make-up granular activated carbon**

virgin granular activated carbon, or reactivated granular activated carbon from the same water treatment plant, added to the reactivated granular activated carbon to compensate for losses during the operations of reactivation (handling, transportation and reactivation itself)

## 3.7

**top-up granular activated carbon**

virgin granular activated carbon, or reactivated granular activated carbon from the same water treatment plant, added to the reactivated granular activated carbon to compensate for losses due to operational (in-service) losses due to attrition and wash-out of granular activated carbon at the water treatment plant

## 4 Description

### 4.1 Identification

#### 4.1.1 Chemical name(s)

Carbon.

#### 4.1.2 Synonym or common names

Reactivated activated coal, reactivated activated charcoal, reactivated active carbon, regenerated granular activated carbon, regenerated activated coal, regenerated activated charcoal, regenerated active carbon.

#### 4.1.3 Chemical formula

C (elementary).

[SIST EN 12915-2:2003](https://standards.iteh.ai/catalog/standards/sist/84d9c0aa-f370-48ab-a9e4-5c8770341398/sist-en-12915-2-2003)

<https://standards.iteh.ai/catalog/standards/sist/84d9c0aa-f370-48ab-a9e4-5c8770341398/sist-en-12915-2-2003>

#### 4.1.4 CAS Registry Number <sup>1)</sup>

7440- 44-0.

#### 4.1.5 EINECS reference <sup>2)</sup>

231-153-3.

### 4.2 Commercial forms

Granular activated carbon is a granular product; by convention not less than 90 percent by mass (% (*m/m*)) is retained on a 180 µm aperture test sieve (see 5.3). The product can be either shaped (moulded/extruded) or irregular (non-moulded), and is available in many grades, differing in adsorption characteristics, hardness, porosity, granulometry, shape and purity.

## 5 Physical properties

### 5.1 General

The physical properties of reactivated granular activated carbon are dependent on the quality of the spent granular activated carbon as well as on the reactivation process.

<sup>1)</sup> Chemical Abstracts Service Registry Number.

<sup>2)</sup> European Inventory of Existing Commercial Chemical Substances.



## 5.2 Appearance

The commercial product consists of black, porous granules of irregular shape or, for moulded or extruded products, in forms such as uniform cylinders, pellets or spheres.

## 5.3 Particle size distribution

### 5.3.1 General

The particle size distribution shall be determined on samples taken at the point of reactivation. The particle size distribution shall be within the supplier's stated tolerance.

NOTE 1 Different applications can require different particle size ranges.

NOTE 2 The particle size can decrease during transportation and handling.

NOTE 3 The particle size distribution is dependent on that of the spent granular activated carbon. It can be impossible to guarantee a particular particle size distribution if the spent granular activated carbon has a substantially degraded particle size distribution.

### 5.3.2 Irregular product

The particle size distribution shall be described by particle size range and by mass of oversize and undersize particles according to application:

- the content of oversize plus undersize shall not exceed 15 % ( $m/m$ ) and not more than 5 % ( $m/m$ ) shall be undersize.

NOTE 1 Other values can be necessary for certain applications.

NOTE 2 Alternatively, particle size distribution can be described by:

- effective size: ( $d_{10}$ );
- uniformity coefficient: ( $U$ );
- minimum size: ( $d_1$ ).

### 5.3.3 Moulded/extruded product

Not more than 3 % ( $m/m$ ) shall pass a test sieve with an aperture size as close as possible to 0,75 times the nominal particle diameter.

## 5.4 Wettability

The wettability shall be greater than 99 % ( $m/m$ ).

## 5.5 Bulk density packed

The bulk density packed shall be greater than or equal to 180 kg/m<sup>3</sup>.

## 5.6 Mechanical strength

The ball-pan hardness shall be greater than or equal to the supplier's declared value.