



SLOVENSKI STANDARD
SIST EN 1018:2013+A1:2015

01-maj-2015

Nadomešča:
SIST EN 1018:2013

Kemikalije, ki se uporabljajo za pripravo pitne vode - Kalcijev karbonat

Chemicals used for treatment of water intended for human consumption - Calcium carbonate

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Calciumcarbonat

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

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ICS:

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

EN 1018:2013+A1

NORME EUROPÉENNE

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Chemicals used for treatment of water intended for human consumption - Calcium carbonate

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

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Calciumcarbonat

This European Standard was approved by CEN on 28 March 2013 and includes Amendment 1 approved by CEN on 5 January 2015.

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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.

CEN members are the national standards bodies of 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 United Kingdom.

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

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Foreword

This document (EN 1018:2013+A1:2015) 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 September 2015, and conflicting national standards shall be withdrawn at the latest by September 2015.

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 \square_{A1} EN 1018:2013 \square_{A1} .

This document includes Amendment 1 approved by CEN on 2015-01-04.

The start and finish of text introduced or altered by amendment is indicated in the text by tags \square_{A1} \square_{A1} .

Significant differences between this edition and EN 1018:2006 are:

- deletion of the reference to EU Directive 80/778/EEC of July, 15 1980 in order to take into account of the latest Directive in force (see [1]);
- changes in designation of products.

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.

EN 1018:2013+A1:2015 (E)**Introduction**

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

- 1) 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;
- 2) 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 document 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 document is subject to regulation or control by National Authorities.

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1 Scope

This European Standard is applicable to calcium carbonate used for treatment of water intended for human consumption. It describes the characteristics of calcium carbonate and specifies the requirements and the corresponding test methods for calcium carbonate. 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 12485, *Chemicals used for treatment of water intended for human consumption — Calcium carbonate, high-calcium lime, half-burnt dolomite, magnesium oxide and calcium magnesium carbonate — Test methods*

ISO 3165, *Sampling of chemical products for industrial use — Safety in sampling*

ISO 6206, *Chemical products for industrial use — Sampling — Vocabulary*

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

3 Terms and definitions

To distinguish between non-porous and porous calcium carbonate, Annex B applies.

4 Description

4.1 Identification

4.1.1 Chemical name

Limestone.

Calcium carbonate.

4.1.2 Synonym or common name

Limestone.

Calcium carbonate.

4.1.3 Relative molecular mass

100,09.

4.1.4 Empirical formula

CaCO₃.

4.1.5 Chemical formula

CaCO₃.

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EN 1018:2013+A1:2015 (E)**4.1.6 CAS-Registry Number¹⁾**

1317-65-3 for limestone.

471-34-1 for calcium carbonate.

4.1.7 EINECS reference²⁾

215-279-6 for limestone.

207-439-9 for calcium carbonate.

4.2 Commercial form

Both types of calcium carbonate (limestone and chemically produced) are available in crushed and granular form of various particle size ranges, as a slurry and in a mixture of both substances.

4.3 Physical properties**4.3.1 Appearance**

The product is a white or grey material in crushed and granular form.

4.3.2 Density

The density of the product is equal to 2,71 g/cm³ at 20 °C.

The bulk density of the product is between 1,0 g/cm³ to 1,5 g/cm³.

4.3.3 Solubility

The solubility of product is equal to 0,014 g/l at 10 °C.

4.3.4 Vapour pressure

Not applicable.

4.3.5 Boiling point at 100 kPa³⁾

Not applicable.

4.3.6 Melting point

Not applicable.

4.3.7 Specific heat

Not known.

4.3.8 Viscosity, dynamic

Not applicable.

1) Chemical Abstracts Service Registry Number.

2) European Inventory of Existing Commercial Chemical Substances.

3) 100 kPa = 1 bar.

4.3.9 Critical temperature

Not applicable.

4.3.10 Critical pressure

Not applicable.

4.3.11 Physical hardness

Not relevant.

4.3.12 Particle size

It varies depending on the application (see A.2.3).

4.4 Chemical properties

Calcium carbonate reacts as an alkali when dissolved in water.

5 Purity criteria**5.1 General**

A1 This European Standard specifies the minimum purity requirements for calcium carbonate 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.

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, required dosage, contents of other impurities and additives used in the product not stated in this European 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 leads to significant quantities of impurities, by-products or additives being present, this shall be notified to the user. **A1**

5.2 Composition of commercial product

The product shall conform to the requirements specified in Table 1:

Table 1 — Composition of commercial product

Parameter	Non-porous calcium carbonate			Porous calcium carbonate	
	A1 Class A1 1	A1 Class A1 2	A1 Class A1 3	A1 Class A1 1	A1 Class A1 2
Content of calcium carbonate (CaCO ₃), in mass fraction in %, in dry substance	> 98	> 94	> 80	> 97	> 85
Total content of calcium carbonate (CaCO ₃) and magnesium carbonate (MgCO ₃) expressed as CaCO ₃ - MgCO ₃ , in mass fraction in %, in dry substance	> 98	> 94	> 90	> 99	> 95