SLOVENSKI STANDARD
SIST EN 1406:2009

01-december-2009

Nadomešča:
SIST EN 1406:1999

Kemikalije, ki se uporabljajo za pripravo pitne vode - Modificirani škrobi

Chemicals used for treatment of water intended for human consumption - Modified starches

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Modifizierte Stärke

Produits chimiques utilisés pour le traitement de l'eau destinée a la consommation humaine - Amidons modifiés

Ta slovenski standard je istoveten z: **EN 1406:2009**

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

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1406

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ICS 71.100.80

Supersedes EN 1406:1998

English Version

Chemicals used for treatment of water intended for human consumption - Modified starches

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

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Modifizierte Stärke

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

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Foreword

This document (EN 1406:2009) 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of an identical text or by endorsement, at the latest by February 2010, and conflicting national standards shall be withdrawn at the latest by February 2010.

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 1406:1998.

Annex A is informative and gives some information on origin, use and handling of modified starches.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland 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 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 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 modified starches used for treatment of water intended for human consumption. It describes the characteristics of modified starches and specifies the requirements and the corresponding test methods for modified starches.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 3696, *Water for analytical laboratory use — Specification and test methods (ISO 3696:1987).*

ISO 1666, *Starch — Determination of moisture content — Oven-drying method.*

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

ISO 5377, *Starch hydrolysis products — Determination of reducing power and dextrose equivalent — Lane and Eynon constant titre method.*

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

ISO 8213, *Chemical products for industrial use — Sampling techniques — Solid chemical products in the form of particles varying from powders to coarse lumps.*

3 Description

3.1 Identification

3.1.1 Chemical names

Chemical names of typical modified starches are listed:

a) non-ionic starch: poly-D-glucose;

b) cationic starch: starch 2-hydroxy-3-(trimethylamino) propylether, chloride;

c) anionic starch: starch carboxymethyl ether, sodium salt.

Other modified starches may be used.

3.1.2 Synonyms or common names

a) starch;

b) modified starch;

c) starch flocculants.

3.1.3 Relative molecular mass

Undegraded potato starch derivatives: typically in the range of 10^6 to 10^8.

3.1.4 Empirical formulae

Empirical formulae for typical modified starches are:

a) non-ionic starch: $(C_6H_{10}O_5)_n$;

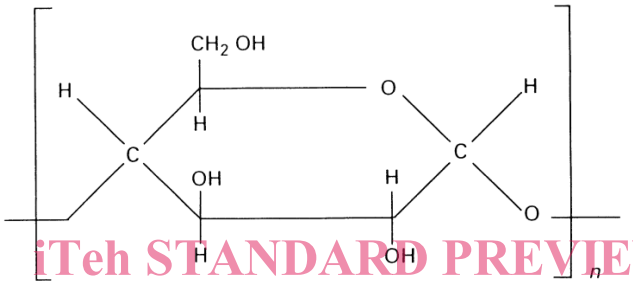
b) cationic starch: $[(C_6H_{10}O_5)(C_{12}H_{24}ONCl)_{0,035\text{-}0,7}]_{n'}$;

c) anionic starch: $[(C_6H_{10}O_5)\ (C_8H_{11}O_7Na)_{0,113}]_{n''}$.

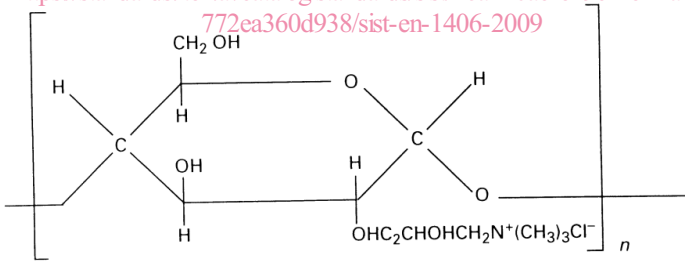
3.1.5 Chemical formulae

Chemical formulae for typical modified starches are:

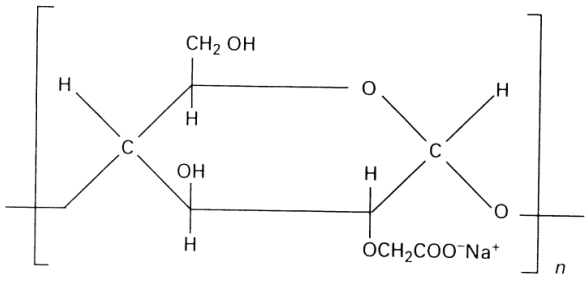
Non-ionic starch:



Cationic starch:



Anionic starch:



3.1.6 CAS Registry Numbers[1)]

a) non-ionic starch: 9005-25-8;

b) cationic starch: 56780-58-6;

c) anionic starch: 9063-38-1.

3.1.7 EINECS reference[2)]

Non-ionic starch has the following EINECS number: 232-679-6.

Modified starches are exempt from EINECS registration providing the reactants used to carry out the modification are EINECS registered.

3.2 Commercial form

Modified starches as specified in this standard are available as solids containing a small amount of residual moisture or as aqueous solutions.

3.3 Physical properties

3.3.1 Appearance

Modified starches are white to pale yellow solids in the form of granule, flake or powder or white to yellowish viscous aqueous solutions.

3.3.2 Density

The bulk densities are as follows:

a) starch powders: 0,4 – 0,7 kg/dm^3;

b) aqueous solution: 1,0 – 1,2 kg/dm^3.

3.3.3 Solubility

The products are soluble in hot or cold water. Their solubility is limited only by viscosity. Typically, anionic starch is soluble to a concentration of 6 % mass fraction, cationic starch to 8 % mass fraction and non-ionic starch to 13 % mass fraction, all in cold water.

3.3.4 Vapour pressure

Not applicable.

3.3.5 Boiling point at 100 kPa

Not applicable.

3.3.6 Melting point

Not applicable.

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1) Chemical Abstracts Service Registry Number.

2) European Inventory of Existing Commercial Chemical Substances.