



SLOVENSKI STANDARD

SIST EN 1406:1999

01-april-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

iTeh STANDARD PREVIEW

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

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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 1406

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 1998

ICS 71.100.80

Descriptors: potable water, water treatment, chemical compounds, starches, description, physical properties, chemical properties, impurities, tests, labelling, storage, information, warning notices

English version

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

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

This European Standard was approved by CEN on 23 March 1998.

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 Central Secretariat 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 Central Secretariat 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, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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Foreword

This European Standard 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 1998, and conflicting national standards shall be withdrawn at the latest by October 1998.

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

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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.

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 .

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

Annex B lists the bibliography.

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2 Normatives references

This European standard incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate place 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.

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 :

- non-ionic starch : poly-D-glucose ;
- cationic starch : starch 2-hydroxy-3-(trimethylamino) propylether, chloride ;
- anionic starch : starch carboxymethyl ether, sodium salt.

Other modified starches can be used.

3.1.2 Synonyms or common names

- starch ;
- modified starch ;
- starch flocculants.

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3.1.3 Relative molecular mass

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

3.1.4 Empirical formulae

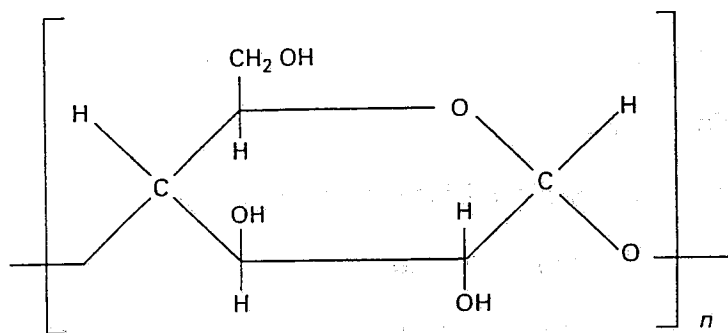
Empirical formulae for typical modified starches are :

- non-ionic starch : $(C_6H_{10}O_5)_n$;
- cationic starch : $[(C_6H_{10}O_5)(C_{12}H_{24}ONCl)_{0,035}]_{n'}$;
- anionic starch : $[(C_6H_{10}O_5)(C_8H_{11}O_7Na)_{0,113}]_{n''}$.

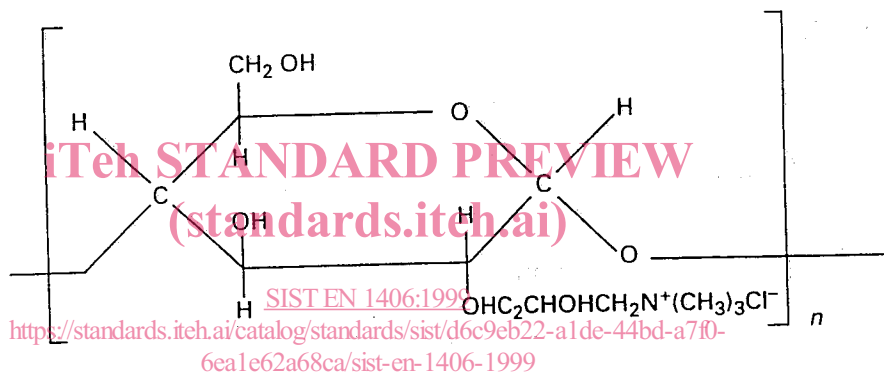
3.1.5 Chemical formulae

Chemical formulae for typical modified starches are :

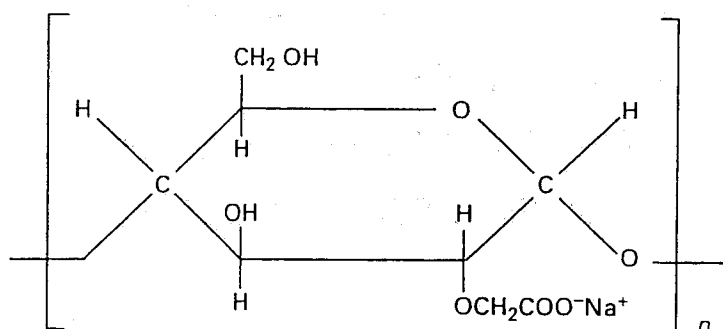
Non-ionic starch :



Cationic starch :



Anionic starch :

**3.1.6 CAS Registry Numbers 1)**

- non-ionic starch : 9005-25-8 ;
- cationic starch : 56780-58-6 ;
- anionic starch : 9063-38-1.

1) Chemical Abstracts Service Registry Number

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.

3.3 Physical properties

3.3.1 Appearance

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

3.3.2 Density

The bulk densities of the product are as follows

- non-ionic starch : 0,3 g/cm³ ;
- cationic starch : 0,2 g/cm³ ;
- anionic starch : 0,3 g/cm³.

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 % (m/m), cationic starch to 8 % (m/m) and non-ionic starch to 13 % (m/m), all in cold water.

3.3.4 Vapour pressure

Not applicable.

3.3.5 Boiling point at 100 kPa

Not applicable.

²⁾ European Inventory of Existing Commercial Chemical Substances