

# SVENSK STANDARD

## SS-EN 1212:2005

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### **Processkemikalier för beredning av dricksvatten – Natriumpolyfosfat**

**Chemicals used for treatment of water intended for human  
consumption – Sodium polyphosphate**



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Europastandarden EN 1212:2005 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 1212:2005.

Denna standard ersätter SS-EN 1212, utgåva 1.

I enlighet med Statens livsmedelsverks föreskrifter om dricksvatten, SLV FS 2001:30, är natriumpolyfosfat inte tillåtet som processkemikalie för beredning av dricksvatten i Sverige.

The European Standard EN 1212:2005 has the status of a Swedish Standard. This document contains the official English version of EN 1212:2005.

This standard supersedes the Swedish Standard SS-EN 1212, edition 1.

According to The National Food Administration's Ordinance with regulations and general advice on drinking water, SLV FS 2001:30, sodium polyphosphate is not permitted as a process chemical for treatment of water intended for human consumption in Sweden.

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Upplysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00.

Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna upplysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), tel +46 8 555 520 00.

Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 1212**

March 2005

ICS 71.100.80

Supersedes EN 1212:1997

English version

## Chemicals used for treatment of water intended for human consumption - Sodium polyphosphate

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

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Natriumpolyphosphat

This European Standard was approved by CEN on 3 February 2005.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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## Foreword

This document (EN 1212:2005) 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 2005, and conflicting national standards shall be withdrawn at the latest by September 2005.

This document supersedes EN 1212:1997.

Significant technical differences between this edition and EN 1212:1997 are as follows:

- a) deletion of the reference to EU Directive 80/778/EEC of July, 15 1980 in order to take into account of the last Directive in force (see [1]);
- b) replacement of ISO 5666-1 by EN 1483 and of EN 26595 by EN ISO 11969.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and 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 document:

- a) this document 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.

**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.



## 1 Scope

This document is applicable to sodium polyphosphate used for treatment of water intended for human consumption. It describes the characteristics and specifies the requirements and the corresponding test methods for sodium polyphosphate. It gives information on its use in water treatment.

## 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 1483, *Water quality — Determination of mercury.*

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

EN ISO 5961, *Water quality — Determination of cadmium by atomic absorption spectrometry (ISO 5961:1994).*

EN ISO 11885, *Water quality — Determination of 33 elements by inductively coupled plasma atomic emission spectroscopy (ISO 11885:1996).*

EN ISO 11969, *Water quality - Determination of arsenic- Atomic absorption spectrometric method (hydride technique (ISO 11969:1996)).*

ISO 2997, *Phosphoric acid for industrial use — Determination of sulfate content — Method by reduction and titrimetry.*

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

ISO 3360, *Phosphoric acid and sodium phosphates for industrial use (including foodstuffs) — Determination of fluorine content — Alizarin complexone and lanthanum nitrate photometric method.*

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

ISO 6703-1, *Water quality — Determination of cyanide — Part 1: Determination of total cyanide.*

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

ISO 8288, *Water quality — Determination of cobalt, nickel, copper, zinc, cadmium and lead — Flame atomic absorption spectrometric methods.*

ISO 9174, *Water quality — Determination of chromium — Atomic absorption spectrometric methods.*

ISO 9965, *Water quality — Determination of selenium — Atomic absorption spectrometric method (hydride technique).*

**SS-EN 1212:2005 (E)****3 Description****3.1 Identification****3.1.1 Chemical name**

Sodium polyphosphate.

**3.1.2 Synonym or common names**

Polyphosphoric acid, sodium salt.

**3.1.3 Relative molecular mass**

Various.

**3.1.4 Empirical formula**

$\text{Na}_{n+2}(\text{P}_n\text{O}_{3n+1})$  or  $\text{Na}_n(\text{H}_2\text{P}_n\text{O}_{3n+1})$  where the degree of condensation  $n$  is at least 4.

**3.1.5 Chemical formula**

$\text{Na}_{n+2}(\text{P}_n\text{O}_{3n+1})$  or  $\text{Na}_n(\text{H}_2\text{P}_n\text{O}_{3n+1})$  where the degree of condensation  $n$  is at least 4.

**3.1.6 CAS Registry Number<sup>1)</sup>**

68915-31-1.

**3.1.7 EINECS reference<sup>2)</sup>**

272-808-3.

**3.2 Commercial forms**

The sodium polyphosphate is available in a number of different forms (see 3.3.1).

Different commercial forms, solids or dissolved in water are possible. All concentrations mentioned refer to the active matter and shall be calculated accordingly.

NOTE Sodium polyphosphate can be a component of mixtures sold for water treatment purposes.

**3.3 Physical properties****3.3.1 Appearance**

Solid: The product is a white powder, granules or glass.

Liquid: The product is a clear solution.

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1) Chemical Abstracts Service Registry Number.

2) European Inventory of Existing Commercial Chemical Substances.

### 3.3.2 Density

Solid: The bulk density of the product varies from 600 g/dm<sup>3</sup> to 1 000 g/dm<sup>3</sup>.

Liquid: The density of solution is 1,042 g/ml for a product concentration of 50 g/l at 20 °C where the degree of condensation  $n$  is at least 4.

### 3.3.3 Solubility in water

The solubility in water is approximately 1 000 g/l at 25 °C.

### 3.3.4 Vapour pressure

Not applicable.

### 3.3.5 Boiling point at 100 kPa<sup>3)</sup>

Not applicable.

### 3.3.6 Melting point

For the solid product 550 °C where the degree of condensation  $n$  is at least 4.

### 3.3.7 Specific heat

Not known.

### 3.3.8 Viscosity (dynamic)

For the solid product it is not applicable.

For the liquid the viscosity is equal to 6 mPa.s for a product concentration of 50 g/l.

### 3.3.9 Critical temperature

Not applicable.

### 3.3.10 Critical pressure

Not applicable.

### 3.3.11 Physical hardness

Not applicable.

## 3.4 Chemical properties

The solutions of sodium polyphosphate have acidic reactions.

The pH value of a solution of a mass fraction of 1 % is approximately 5 to 6.

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3) 100 kPa = 1 bar.