

# SVENSK STANDARD

## SS-EN 12173:2012

Fastställt/Approved: 2012-11-06  
Publicerad/Published: 2012-11-14  
Utgåva/Edition: 3  
Språk/Language: engelska/English  
ICS: 13.060.20; 71.100.80

---

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

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



# Standarder får världen att fungera

*SIS (Swedish Standards Institute) är en fristående ideell förening med medlemmar från både privat och offentlig sektor. Vi är en del av det europeiska och globala nätverk som utarbetar internationella standarder. Standarder är dokumenterad kunskap utvecklad av framstående aktörer inom industri, näringsliv och samhälle och befrämjar handel över gränser, bidrar till att processer och produkter blir säkrare samt effektiviserar din verksamhet.*

## Delta och påverka

Som medlem i SIS har du möjlighet att påverka framtida standarder inom ditt område på nationell, europeisk och global nivå. Du får samtidigt tillgång till tidig information om utvecklingen inom din bransch.

## Ta del av det färdiga arbetet

Vi erbjuder våra kunder allt som rör standarder och deras tillämpning. Hos oss kan du köpa alla publikationer du behöver – allt från enskilda standarder, tekniska rapporter och standardpaket till handböcker och onlinetjänster. Genom vår webbtjänst e-nav får du tillgång till ett lättnavigerat bibliotek där alla standarder som är aktuella för ditt företag finns tillgängliga. Standarder och handböcker är källor till kunskap. Vi säljer dem.

## Utveckla din kompetens och lyckas bättre i ditt arbete

Hos SIS kan du gå öppna eller företagsinterna utbildningar kring innehåll och tillämpning av standarder. Genom vår närhet till den internationella utvecklingen och ISO får du rätt kunskap i rätt tid, direkt från källan. Med vår kunskap om standarders möjligheter hjälper vi våra kunder att skapa verklig nytta och lönsamhet i sina verksamheter.

**Vill du veta mer om SIS eller hur standarder kan effektivisera din verksamhet är du välkommen in på [www.sis.se](http://www.sis.se) eller ta kontakt med oss på tel 08-555 523 00.**



# Standards make the world go round

*SIS (Swedish Standards Institute) is an independent non-profit organisation with members from both the private and public sectors. We are part of the European and global network that draws up international standards. Standards consist of documented knowledge developed by prominent actors within the industry, business world and society. They promote cross-border trade, they help to make processes and products safer and they streamline your organisation.*

## Take part and have influence

As a member of SIS you will have the possibility to participate in standardization activities on national, European and global level. The membership in SIS will give you the opportunity to influence future standards and gain access to early stage information about developments within your field.

## Get to know the finished work

We offer our customers everything in connection with standards and their application. You can purchase all the publications you need from us - everything from individual standards, technical reports and standard packages through to manuals and online services. Our web service e-nav gives you access to an easy-to-navigate library where all standards that are relevant to your company are available. Standards and manuals are sources of knowledge. We sell them.

## Increase understanding and improve perception

With SIS you can undergo either shared or in-house training in the content and application of standards. Thanks to our proximity to international development and ISO you receive the right knowledge at the right time, direct from the source. With our knowledge about the potential of standards, we assist our customers in creating tangible benefit and profitability in their organisations.

**If you want to know more about SIS, or how standards can streamline your organisation, please visit [www.sis.se](http://www.sis.se) or contact us on phone +46 (0)8-555 523 00**



Europastandarden EN 12173:2012 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 12173:2012.

Denna standard ersätter SS-EN 12173:2006, utgåva 2.

The European Standard EN 12173:2012 has the status of a Swedish Standard. This document contains the official version of EN 12173:2012.

This standard supersedes the Swedish Standard SS-EN 12173:2006, edition 2.

### **Nationell kommentar/National comment**

I enlighet med Livsmedelsverkets föreskrifter (SLVFS 2001:30) om dricksvatten, är natriumfluorid för närvarande inte tillåten som processkemikalie för beredning av dricksvatten i Sverige.

According to the National Food Agency's ordinance with regulations and general advice on drinking water, SLVFS 2001:30, sodium fluoride is not permitted in Sweden as a process chemical for treatment of water intended for human consumption.

© Copyright/Upphovsrätten till denna produkt tillhör SIS, Swedish Standards Institute, Stockholm, Sverige. Användningen av denna produkt regleras av slutanvändarlicensen som återfinns i denna produkt, se standardens sista sidor.

© Copyright SIS, Swedish Standards Institute, Stockholm, Sweden. All rights reserved. The use of this product is governed by the end-user licence for this product. You will find the licence in the end of this document.

*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), telephone +46 8 555 520 00. Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.*

Denna standard är framtagen av kommittén för Vattenreningskemikalier och industrikalk, SIS/TK 431.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på [www.sis.se](http://www.sis.se) - där hittar du mer information.



EUROPEAN STANDARD

**EN 12173**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2012

ICS 71.100.80

Supersedes EN 12173:2005

English Version

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

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

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Natriumfluorid

This European Standard was approved by CEN on 23 September 2012.

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 CEN-CENELEC 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 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.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

<b>Contents</b>		Page
Foreword.....		3
Introduction .....		4
1	Scope .....	5
2	Normative references .....	5
3	Description .....	5
4	Purity criteria.....	7
5	Test methods.....	8
6	Labelling - Transportation - Storage.....	13
Annex A (informative) General information on sodium fluoride .....		16
Annex B (normative) General rules relating to safety.....		17
Bibliography.....		18

## Foreword

This document (EN 12173:2012) 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 April 2013, and conflicting national standards shall be withdrawn at the latest by April 2013.

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 12173:2005.

The significant technical differences between this edition and EN 12173:2005 are as follows:

- Modification of 6.2 on labelling, deletion of the reference to EU Directive 80/778/EEC of 15 July 1980 in order to take account of the latest Directive in force.

According to the CEN/CENELEC Internal Regulations, the national standards organisations 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.

## 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.

NOTE Conformity with this European 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 sodium fluoride used for treatment of water intended for human consumption. It describes the characteristics of sodium fluoride and specifies the requirements and the corresponding test methods for sodium fluoride. It gives information on its use in water treatment. It also determines the rules relating to safe handling and use (see Annex B).

## 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 ISO 3696, *Water for analytical laboratory use — Specification and test methods* (ISO 3696)

ISO 2831, *Sodium fluoride for industrial use — Determination of water-insoluble matter*

ISO 2832, *Sodium fluoride for industrial use — Determination of moisture content*

ISO 2833, *Sodium fluoride for industrial use — Determination of fluorine content — Modified Willard-Winter-method*

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

ISO 5993, *Sodium hydroxide for industrial use — Determination of mercury content — Flameless atomic absorption spectrometric method*

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

ISO 6353-1, *Reagents for chemical analysis — Part 1: General test methods*

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 name

Sodium fluoride.

#### 3.1.2 Synonym or commons name

Sodium fluoride.

#### 3.1.3 Relative molecular mass

42.

#### 3.1.4 Empirical formula

NaF.

**SS-EN 12173:2012 (E)****3.1.5 Chemical formula**

NaF.

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

7681-49-4.

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

231-667-8.

**3.2 Commercial form**

The product is a solid (crystals or powder).

**3.3 Physical properties****3.3.1 Appearance and odour**

The product is a colourless fine crystalline odourless powder or crystals.

**3.3.2 Density**

The density of the crystals is 2,8 g/cm<sup>3</sup> at 20 °C.

The bulk density of the product is 0,6 g/cm<sup>3</sup> to 1,4 g/cm<sup>3</sup> at 20 °C.

**3.3.3 Solubility (in water)**

The solubility of the product in water is 40 g/l at 20°C.

**3.3.4 Vapour pressure**

Not applicable.

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

The product boils at approximately 1 700 °C.

**3.3.6 Crystallisation point**

The product melts at approximately 988 °C.

**3.3.7 Specific heat**

Not known.

---

1) Chemical Abstracts Service Registry Number.

2) European Inventory of Existing Commercial Chemical Substances.

3) 100 kPa = 1 bar.

**3.3.8 Viscosity dynamic**

Not applicable.

**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**

Sodium fluoride releases hydrogen fluoride when in contact with acids.

**4 Purity criteria**

**4.1 General**

This European Standard specifies the minimum purity requirements for sodium fluoride 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 products not stated in this product 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.

**4.2 Composition of commercial product**

The content of sodium fluoride shall not be less than a mass fraction of 98 % (NaF).

The concentration of sodium fluoride shall be within  $\pm 5$  % of the manufacturer's declared value.

**4.3 Impurities and main by-products**

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

**Table 1 — Impurities**

Impurity		Limit in mass fraction in % of commercial product
Water-insoluble matter	max	0,5
Moisture	max	0,5