

Chemicals used for treatment of water intended for human consumption — Hexafluorosilicic acid

ICS 13.060.20; 71.100.80

National foreword

This British Standard is the UK implementation of . It supersedes BS EN 12175:2001 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee CII/59, Chemicals for drinking water treatment.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 January 2009

© BSI 2009

ISBN 978 0 580 57138 1

Amendments/corrigenda issued since publication

Date	Comments

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12175

July 2006

ICS 71.100.80

Supersedes EN 12175:2001

English Version

**Chemicals used for treatment of water intended for human
consumption - Hexafluorosilicic acid**

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

Produkte zur Aufbereitung von Wasser für den
menschlichen Gebrauch - Hexafluorkieselsäure

This European Standard was approved by CEN on 23 June 2006.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

© 2006 CEN All rights of exploitation in any form and by any means reserved
worldwide for CEN national Members.

Ref. No. EN 12175:2006: E

Contents

	Page
Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Description	5
3.1 Identification.....	5
3.2 Commercial form	6
3.3 Physical properties.....	6
3.4 Chemical properties	7
4 Purity criteria.....	7
4.1 General.....	7
4.2 Composition of commercial product.....	7
4.3 Impurities and main by-products	7
4.4 Chemical parameters	8
5 Test methods.....	8
5.1 General.....	8
5.2 Sampling	8
5.3 Analyses	10
6 Labelling - Transportation - Storage.....	16
6.1 Means of delivery.....	16
6.2 Risk and safety labelling according to the EU Directives	17
6.3 Transportation regulations and labelling.....	17
6.4 Marking	17
6.5 Storage.....	18
Annex A (informative) General information on hexafluorosilicic acid.....	19
A.1 Origin	19
A.2 Use	19
Annex B (normative) General rules relating to safety.....	20
B.1 Rules for safe handling and use	20
B.2 Emergency procedures	20
Bibliography	21

Foreword

This document (EN 12175:2006) 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 January 2007, and conflicting national standards shall be withdrawn at the latest by January 2007.

This document supersedes EN 12175:2001.

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, Romania, 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 hexafluorosilicic acid used for treatment of water intended for human consumption. It describes the characteristics of hexafluorosilicic acid and specifies the requirements and the corresponding test methods for hexafluorosilicic acid. It gives information on its use in water treatment. It also determines the rules relating to safe handling and use of hexafluorosilicic acid (see Annex B).

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

ISO 5440, *Sodium hexafluorosilicate for industrial use - Determination of phosphate content - Molybdovanadate spectrophotometric method*

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*

3 Description

3.1 Identification

3.1.1 Chemical name

Hexafluorosilicic acid

3.1.2 Synonym or commons names

Hydrofluosilicic acid

Silicate -hexafluoro –dihydrogen

Fluorosilicic acid

HFSA

3.1.3 Relative molecular mass

144,09

3.1.4 Empirical formula

H_2SiF_6

3.1.5 Chemical formula

H_2SiF_6 .

3.1.6 CAS-Registry Number¹⁾

16961-83-4

3.1.7 EINECS reference²⁾

241-034-8

3.2 Commercial form

The product is an aqueous solution.

3.3 Physical properties

3.3.1 Appearance and odour

The product is a clear, colourless liquid with a pungent odour.

3.3.2 Density

The density of a mass fraction 35 % solution at 25 °C is 1,35 g/ml.

The density of a mass fraction 20 % solution at 25 °C is 1,18 g/ml.

3.3.3 Solubility (in water)

The product is miscible in any proportion.

3.3.4 Vapour pressure

The vapour pressure at 20 °C is approximately 3 kPa³⁾.

3.3.5 Boiling point at 100 kPa

The product boils and decomposes at 110 °C.

3.3.6 Crystallisation point

A solution of mass fraction of 35 % crystallizes at -30 °C and of a mass fraction of 20 % crystallizes at -11,6 °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.