BS EN 12175:2022

BSI Standards Publication

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

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National foreword

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

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

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Published by BSI Standards Limited 2022

ISBN 978 0 539 12362 3

ICS 13.060.20; 71.100.80

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 April 2022.

Amendments/corrigenda issued since publication

Date	Text affected

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12175

April 2022

ICS 71.100.80

Supersedes EN 12175:2013

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 - Acide hexafluorosilicique

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Hexafluorkieselsäure

This European Standard was approved by CEN on 13 March 2022.

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European foreword

This document (EN 12175:2022) 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of an identical text or by endorsement, at the latest by October 2022, and conflicting national standards shall be withdrawn at the latest by October 2022.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12175:2013.

In comparison with the previous edition, the following technical modifications have been made:

a) modification of 7.3 on transportation regulations and labelling, adding the sentence "The user must be aware of the incompatibilities between transported products.";

b) modification of 7.4 on marking. The requirements of marking are also applied to the accompanying documents.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey 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 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 (see Annex A).

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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 documents are referred to in the text in such a way that some or all of their content constitutes requirements 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)*

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 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Description

4.1 Identification

4.1.1 Chemical name

Hexafluorosilicic acid.

4.1.2 Synonym or common name

Hydrofluosilicic acid.

Silicate-hexafluoro–dihydrogen.

Fluorosilicic acid.

HFSA.

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4.1.3 Relative molecular mass

144,09.

4.1.4 Empirical formula

H_2SiF_6.

4.1.5 Chemical formula

H_2SiF_6.

4.1.6 CAS-Registry Number [1]

16961-83-4.

4.1.7 EINECS reference [2]

241-034-8.

4.2 Commercial form

The product is an aqueous solution.

4.3 Physical properties

4.3.1 Appearance and odour

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

4.3.2 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.

4.3.3 Solubility (in water)

The product is miscible in any proportion.

4.3.4 Vapour pressure

The vapour pressure at 20 °C is approximately 3 kPa [3].

4.3.5 Boiling point at 100 kPa

The product boils and decomposes at 110 °C.

4.3.6 Crystallization point

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

4.3.7 Specific heat

Not known.

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[1] Chemical Abstracts Service Registry Number.
[2] European Inventory of Existing Commercial Chemical Substances.
[3] 100 kPa = 1 bar.

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