



# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0  
Creation Date: July 15, 2019  
Revision Date: July 15, 2019

## SECTION 1: Identification

### 1.1 GHS Product identifier

**Product name** Hexafluorosilicic acid

### 1.2 Other means of identification

**Product number**

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**Other names**

Fluorosilicic acid; Sand acid; CORTICOTROPHIN

### 1.3 Recommended use of the chemical and restrictions on use

**Identified uses**

Industrial and scientific research use.

**Uses advised against**

no data available

### 1.4 Supplier's details

**Company**

Shanghai Yien Chemical Technology Co., Ltd

**Address**

Building 6, 28 Yingong Road, Fengxian District, Shanghai  
Chemical Industry Zone, Shanghai, 201400, China

**Telephone**

+86-400-133-2688

### 1.5 Emergency phone number

**Emergency phone number**

+86-400-133-2688

**Service hours**

Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Skin corrosion, Sub-category 1B

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)**



**Signal word**

Danger

**Hazard statement(s)**

H314 Causes severe skin burns and eye damage

**Precautionary statement(s)**

**Prevention**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 Wash ... thoroughly after handling.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

<b>Response</b>	P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P363 Wash contaminated clothing before reuse. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P316 Get emergency medical help immediately. P321 Specific treatment (see ... on this label). P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>Storage</b>	P405 Store locked up.
<b>Disposal</b>	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

## 2.3 Other hazards which do not result in classification

no data available

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Hexafluorosilicic acid	Hexafluorosilicic acid	16961-83-4	241-034-8	100%

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## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Fresh air, rest. Half-upright position. Refer for medical attention.

#### Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer immediately for medical attention.

#### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

#### Following ingestion

Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer for medical attention .

### 4.2 Most important symptoms/effects, acute and delayed

Inhalation of vapor produces severe corrosive effect on mucous membrane. Ingestion causes severe burns of mouth and stomach. Contact with liquid or vapor causes severe burns of eyes and skin. (USCG, 1999)

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

no data available

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## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Excerpt from ERG Guide 154 [Substances - Toxic and/or Corrosive (Non-Combustible)]:  
SMALL FIRE: Dry chemical, CO2 or water spray. LARGE FIRE: Dry chemical, CO2, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material. FIRE

INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. (ERG, 2016)

## **5.2 Specific hazards arising from the chemical**

Special Hazards of Combustion Products: Irritating fumes of hydrogen fluoride may form in fire. (USCG, 1999)

## **5.3 Special protective actions for fire-fighters**

In case of fire in the surroundings, use appropriate extinguishing media.

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# **SECTION 6: Accidental release measures**

## **6.1 Personal precautions, protective equipment and emergency procedures**

Personal protection: complete protective clothing including self-contained breathing apparatus. Collect leaking and spilled liquid in sealable iron containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment.

## **6.2 Environmental precautions**

Personal protection: complete protective clothing including self-contained breathing apparatus. Collect leaking and spilled liquid in sealable iron containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment.

## **6.3 Methods and materials for containment and cleaning up**

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

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# **SECTION 7: Handling and storage**

## **7.1 Precautions for safe handling**

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

## **7.2 Conditions for safe storage, including any incompatibilities**

Separated from strong bases and food and feedstuffs. Well closed.

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# **SECTION 8: Exposure controls/personal protection**

## **8.1 Control parameters**

**Occupational Exposure limit values**

no data available

**Biological limit values**

no data available

## **8.2 Appropriate engineering controls**

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

## **8.3 Individual protection measures, such as personal protective equipment (PPE)**

**Eye/face protection**

Wear face shield or eye protection in combination with breathing protection.

#### **Skin protection**

Protective gloves. Protective clothing.

#### **Respiratory protection**

Use ventilation, local exhaust or breathing protection.

#### **Thermal hazards**

no data available

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## **SECTION 9: Physical and chemical properties and safety characteristics**

<b>Physical state</b>	Liquid. Fuming.
<b>Colour</b>	Colourless.
<b>Odour</b>	no data available
<b>Melting point/freezing point</b>	-16.6 °C.
<b>Boiling point or initial boiling point and boiling range</b>	105 °C
<b>Flammability</b>	Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.
<b>Lower and upper explosion limit/flammability limit</b>	no data available
<b>Flash point</b>	108-109°C
<b>Auto-ignition temperature</b>	no data available
<b>Decomposition temperature</b>	no data available
<b>pH</b>	no data available
<b>Kinematic viscosity</b>	dynamic viscosity (in mPa s) = 11. Temperature:24.1°C.
<b>Solubility</b>	Miscible with water
<b>Partition coefficient n-octanol/water</b>	no data available
<b>Vapour pressure</b>	17.26 mm Hg. Temperature:20 °C. Remarks:Run 1 (2.3 kPa).;17.3 mm Hg. Temperature:20 °C. Remarks:Run 2 (2.31 KPa).;17.27 mm Hg. Temperature:20 °C. Remarks:Run 3 (2.3 KPa).
<b>Density and/or relative density</b>	1.04 g/cm <sup>3</sup> . Temperature:17.5 °C.
<b>Relative vapour density</b>	no data available
<b>Particle characteristics</b>	no data available

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## **SECTION 10: Stability and reactivity**

### **10.1 Reactivity**

Decomposes on heating. This produces toxic fumes including hydrogen fluoride. The solution in water is a strong acid. It reacts violently with bases and is corrosive. Reacts with water and steam. This produces toxic and corrosive fumes. Attacks glass and stoneware. Attacks many metals. This produces flammable/explosive gas (hydrogen - see ICSC 0001). This substance (anhydrous form) dissociates almost instantly into silicon tetrafluoride and corrosive and toxic hydrogen fluoride.

### **10.2 Chemical stability**

no data available

### **10.3 Possibility of hazardous reactions**

FLUOROSILICIC ACID can react with strong acids (such as sulfuric acid) to release fumes of toxic hydrogen fluoride. Attacks glass and materials containing silica. Reacts

exothermically with chemical bases (examples: amines, amides, inorganic hydroxides). Reacts with active metals, including iron and aluminum to dissolve the metal and liberate hydrogen and/or toxic gases. Can initiate polymerization in certain alkenes. Reacts with cyanide salts and compounds to release gaseous hydrogen cyanide. Flammable and/or toxic gases are also often generated by reactions with dithiocarbamates, isocyanates, mercaptans, nitrides, nitriles, sulfides, and weak or strong reducing agents. Additional gas-generating reactions may occur with sulfites, nitrites, thiosulfates (to give H<sub>2</sub>S and SO<sub>3</sub>), dithionites (SO<sub>2</sub>), and carbonates. Can catalyze (increase the rate of) chemical reactions. Decomposes when heated to the boiling point to produce very toxic and corrosive hydrogen fluoride gas.

#### **10.4 Conditions to avoid**

no data available

#### **10.5 Incompatible materials**

no data available

#### **10.6 Hazardous decomposition products**

no data available

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### **SECTION 11: Toxicological information**

#### **Acute toxicity**

- Oral: no data available
- Inhalation: no data available
- Dermal: no data available

#### **Skin corrosion/irritation**

no data available

#### **Serious eye damage/irritation**

no data available

#### **Respiratory or skin sensitization**

no data available

#### **Germ cell mutagenicity**

no data available

#### **Carcinogenicity**

no data available

#### **Reproductive toxicity**

no data available

#### **STOT-single exposure**

The substance is corrosive to the eyes, skin and respiratory tract. Corrosive on ingestion. Inhalation of the vapour may cause lung oedema. The effects may be delayed. Medical observation is indicated. See Notes.

#### **STOT-repeated exposure**

The substance may have effects on the bones and teeth. This may result in fluorosis.

#### **Aspiration hazard**

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

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### **SECTION 12: Ecological information**

#### **12.1 Toxicity**

- Toxicity to fish: LC50 - summary of findings in various species - 51 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - trichoptera aquatic larvae - 26 - 48 mg/L - 96 h.
- Toxicity to algae: EC50 - various algae species - 43 mg/L - 96 h.
- Toxicity to microorganisms: NOEC - various - 83 mg/L - 48 h.

## 12.2 Persistence and degradability

no data available

## 12.3 Bioaccumulative potential

no data available

## 12.4 Mobility in soil

no data available

## 12.5 Other adverse effects

no data available

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# SECTION 13: Disposal considerations

## 13.1 Disposal methods

### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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# SECTION 14: Transport information

## 14.1 UN Number

ADR/RID: UN1778 (For reference only, please check.)

IMDG: UN1778 (For reference only, please check.)

IATA: UN1778 (For reference only, please check.)

## 14.2 UN Proper Shipping Name

ADR/RID: FLUOROSILICIC ACID (For reference only, please check.)

IMDG: FLUOROSILICIC ACID (For reference only, please check.)

IATA: FLUOROSILICIC ACID (For reference only, please check.)

## 14.3 Transport hazard class(es)

ADR/RID: 8 (For reference only, please check.)

IMDG: 8 (For reference only, please check.)

IATA: 8 (For reference only, please check.)

## 14.4 Packing group, if applicable

ADR/RID: II (For reference only, please check.)

IMDG: II (For reference only, please check.)

IATA: II (For reference only, please check.)

## 14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

## 14.6 Special precautions for user

no data available

## 14.7 Transport in bulk according to IMO instruments

no data available

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## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Hexafluorosilicic acid	Hexafluorosilicic acid	16961-83-4	241-034-8
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

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## SECTION 16: Other information

### Information on revision

**Creation Date** July 15, 2019

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### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

### Other Information

Marketed only as aqueous solution. Solidification point for 60-70% solution: solidifies at about 19°C, forming a crystalline dihydrate. Other melting points: <-30°C (35%)

solution). Relative density for a 61% solution is 1.46 and for 35% solution is 1.38. Vapour pressure for a 35% solution is about 3 kPa. The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Temperature of decomposition is unknown in the literature. Immediate administration of an appropriate inhalation therapy by a doctor, or by an authorized person, should be considered.

**Any questions regarding this SDS, Please send your inquiry to [sds@xixisys.com](mailto:sds@xixisys.com)**

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