



## MSDS FOR HYDROFLUORIC ACID

\*\*\*\* MATERIAL SAFETY DATA SHEET \*\*\*\*

**Note: this chemical is extremely hazardous. Do not use without taking professional advice**

MSDS Number: HXMSDS-01

Date of issue: 2004.01.01

### 1. Identification of substance

Trade name: Hydrofluoric Acid

Molecular Formula: HF

UN No.: 1790

CAS No.: 7664-39-3

Manufacturer/Supplier: Sinchem Industry Co., Limited

ADD.: No.500, XiongLong Road, Xiamen, China

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Emergency information: +86-592-2237696

### 2. Composition/Data on component

Hydrofluoric Acid: 70%

Chemical Entity	CAS No	Proportions(%)	Hazardous
HYDROFLUORIC ACID	[7664-39-3]	30%-70%	Yes

**Appearance:**

colourless liquid with a sharp pungent odour.

**Uses:**

Chemical intermediate, etching and polishing of glass and pottery, cleaning of metals, mineral extraction.

### 3. Hazards identification

UN Major Hazard Class: 8.0.

## **Subsidiary Risk: 6.1**

### **Hazard Description**

#### **Hazardous!!**

**Hazard Symbols:** T + C HF acid as liquid is extremely corrosive and toxic.

Inhalation, swallow, eye or skin contacting with cause severe injury or death. Hydrofluoric Acid cause severe, deeply penetrating burns to the skin, eyes, and lungs.

Do not store in glass containers. Use and store HF in polyethylene, polypropylene, Teflon, wax, lead or platinum containers.

It will also attack glazes, enamels, pottery, concrete, rubber, leather, many metals (especially cast iron) and organic compounds. Upon reaction with metals, explosive hydrogen gas may be formed.

#### **Rish Phrases**

**R26/27/28** Very toxic by inhalation, in contact with skin and if swallowed.

**R35** Causes severe burns.

**R41** Risk of serious damage to the eyes.

## **4. First-aid measures**

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### **Swallowed:**

Do not give anything by mouth if victim is losing consciousness or is unconscious or convulsing. Rinse mouth of victim thoroughly with water and spit out rinse water. DO NOT INDUCE VOMITING. Give large quantity of water containing six tablets of effervescent calcium gluconate every two hours until admitted to hospital. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Repeat administration of water. Obtain medical attention immediately.

### **Eye:**

Immediately flush the contaminated eye(s) with gently flowing water for 15 minutes, by the clock, holding the eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. Continue irrigation with normal saline solution or water until the severe pain of the burn is relieved. Instill several drops of sterile calcium gluconate(1% solution). Obtain medical attention immediately. NOTE: do not use any of the skin treatment preparation for burns of the eye. Obtain medical attention immediately.

### **Skin:**

First aid personnel should avoid contact with this chemical. Wear impervious gloves when assisting patient. Immediately flush contaminated skin area with gently running water for at least 20 minutes. While washing with water remove contaminated clothing, footwear and leather goods (eg. watchbands, belts). Wearing protective gloves the first aid person should gently apply the 2.5% calcium gluconate gel to the affected area and leave on the skin until 15 minutes after the pain has subsided. If gel not readily available, continue washing with water. For burns on the skin affecting more than 65% cm<sup>2</sup> (approximately the area of the palm of the hand), give six tablets of effervescent calcium gluconate in water by mouth every two hours until admitted to hospital. Obtain medical attention immediately.

### **Inhaled:**

Rescuer should wear appropriate personal protection to avoid skin contamination and breathing hydrogen fluoride fumes. Move patient from area, resuscitate if necessary. Administer nebulised gluconate (4ml of 2.8% calcium gluconate solution [made of mixing 1 part 10% calcium gluconate with 3 parts N saline solution] with oxygen). Give six (6) effervescent calcium gluconate tablets in water by mouth and repeat at 2 hourly intervals until admitted to hospital. Seek medical attention as

potentially fatal systemic effects are likely. Transfer promptly to a hospital for possible intensive care.

## **5. Fire fighting measures**

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**Combustibility:** Noncombustible

**Flash point:** N/A

**Explosion limits:** N/A

Fire fighters should wear full protective clothing including self-contained breathing apparatus. Use water in flooding quantities as fog. In case of fire use dry agent or CO<sub>2</sub> extinguishing media. If water there may be a danger of violent HF splashing. In case of fire evacuate the area immediately.

## **6. Accidental release measures**

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Person-related safety precautions: Wear full protective equipment. Rubber gloves, face mask or safety glasses, apron, good ventilation.

Isolate spill or leak area immediately in all directions. Keep unauthorized personnel away. Stop leak if you can do it without risk. Do not allow spill material to enter sewers or atercourses. Ventilate spill area.

Allow spill to vapourise and disperse, or cover with sodium carbonate (soda ash) or an equal mixture of soda ash and slaked lime. After mixing, add water if necessary to form a slurry. Collect material in suitable containers for later disposal. Wash spill site thoroughly.

## **7. Handling and storage**

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Information for safe handling and storage:

Keep container tightly closed.

Store HF in plastic (polyethylene, polypropylene or PVC) containers. Do not store in glass containers.

Stored in a well ventilated and cool place. The storage area should have adequate, independent, ventilation and have no sources of heat or sparks.

Fans or other electrical equipment should be spark-resistant in some containers HF degrades to produce flammable hydrogen gas. When opening HF containers ensure that no sparks or sources of ignition are present and that the work area is well ventilated. Use extreme caution in all procedures involving HF. Open containers of HF should not be left unattended. When splashi or inhalation exposure is possible , appropriated protective clothing must be worn. Not to be loaded with Class 1, 4.3, 5.1, 5.2, 6\*, 7, Foodstuff and foodstuff empties (\* where the Class 6 substance is a cyanide and Class 8 substance is an acid). Keep away from metals (steel, copper, aluminium) and glass.

## **8. Exposure controls / personal protection**

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The maximum permitted concentration of the material: 1mg/m<sup>3</sup>(F)(LC<sub>50</sub> 1.276 × 10<sup>-3</sup>)

## **Personal Protection**

Wear suitable, full protective equipment. Approved respiratory protection, rubber gloves, face mask or safety glasses etc., apron, good ventilation. Do not work without calcium gluconate gel available to treat burns. Do not assume that gloves provide an impenetrable barrier to the acid. DO NOT WORK ALONE! Ensure that those working are aware of how to treat hydrofluoric acid burns in an emergency.

## **Safety phrases**

**S7/9** Keep container tightly closed and in a well ventilated place.

**S26** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**S36/37** Wear suitable protective clothing and gloves.

**S39** Wear eye / face protection.

**S45** In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).

## **9. Physical and chemical properties**

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**Form:** liquid

**Color:** colorless

**Odor:** a sharp pungent odor

**Melting Point:** -35 deg C

**Boiling Point:** 103 deg C

**Vapour Pressure:** 150 mmHg(1 atmosphere)

## **10. Stability and reactivity**

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### **Stability**

**Stable.** Material is stable under normal conditions of temperature and pressure.

### **Reactivity**

Do not store in glass containers. Light sensitive.

Materials to be avoided: Avoid contact with bases (eg. caustic soda), can react violently. Incompatible with strong bases, metals, glass, leather, water, alkalies, concrete, silica, sulphides, cyanides, carbonates.

Dangerous reactions: Upon reaction with metals, explosive hydrogen gas may be formed.

## **11. Toxicological information**

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**Acute toxicity:**

LD<sub>50</sub>

LC<sub>50</sub> 1044mg/m<sup>3</sup> (rat)

**Extremely toxic.** May be fatal if inhaled or ingested. Readily absorbed through the skin - skin

contact may be fatal. Acts as a systemic poison. Possible mutagen. Reaction may be delayed. Any contact with this material, even minor, requires immediate medical attention.

**Risk phrases**

**R26/27/28/35/41**

**12. Ecological information**

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**General notes:**

Do not allow material to be released to the environment without proper governmental permits.

**13. Disposal considerations**

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Dispose of in a manner consistent with federal, state, and local regulations.

**14. Transport information**

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**UN No.:** 1790

**UN Major hazard class:** 8.0.

**Subsidiary Risk:** 6.1

**Packing group:** II

**15. Regulations**

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**Hazard symbols**

T Toxic C Corrosive

**Risk phrases**

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**National regulations**

N/A

**16. Other information**

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**Department of making out:**

**Department of looking through:**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees.