
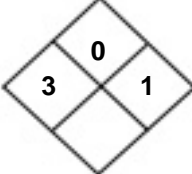


Material Safety Data Sheet

Revision Issued: 2/28/07	Supercedes: 12/31/2006	First Issued: 1/20/1996
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Section I – Product and Company Identification

Product Name: Hydrofluosilicic Acid	PotashCorp MSDS No.: 52 ERG No.: 154
1101 Skokie Blvd., Northbrook, IL 60062 Phone (800) 241-6908 / (847) 849-4200  Suite 500, 122 – 1 st Avenue South Saskatoon, Saskatchewan Canada S7K7G3 Phone (800) 667-0403 from Canada (800) 667-3930 from USA Emergencies (800) 424-9300 (CHEMTREC) Web Site www.potashcorp.com Health Emergencies, Contact Your Local Poison Center	Flammability Health  Reactivity Specific Hazard NFPA Code

Common Name: Hydrofluosilicic Acid	Formula: H ₂ SiF ₆	Synonym: HFSA	Uses: Industrial
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Section II – Composition / Information On Ingredients

Chemical Name	CAS No.	Exposure Limits								
		OSHA PEL		TLV – TWA		STEL		CEIL		% by Weight
		mg/m ³	ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³	ppm	
Hydrofluosilicic Acid	16961-83-4		2.5 *		2.5 *					24
H ₂ SiF ₆ , as F			2.5		2.5					19

* No exposure limits have been established for Hydrofluosilicic Acid, however, the OSHA Permissible Exposure Limit (PEL) and ACGIH threshold limit value (TLV) of 3 ppm (2.5 mg/m³) for fluoride for the eight hour time weighted average applies.

Section III – Hazard Identification

Potential Acute Health Effects:	Hydrofluosilicic acid is extremely corrosive to the skin, eyes or mucous membrane through direct contact, inhalation or ingestion. Handle with extreme caution.			
Eyes and Skin:	May cause irritation or burns in all parts of the body. Eye contact may cause severe damage, including ulceration of the cornea and blindness if not adequately flushed.			
Inhalation:	May cause irritation or burns in all parts of the body, including nose, throat and respiratory system. Symptoms of overexposure may include ulceration of the nose and throat, coughing, salivation, headache, fatigue, dizziness, nausea, shock and pulmonary edema (fluid buildup in the lungs causing great difficulty in breathing). May lead to coma or death.			
Ingestion:	May cause tissue destruction of the digestive tract, ulceration of mucous membranes, intense thirst, abdominal pains, vomiting, shock, convulsions and death.			
Potential Chronic Health Effects:	Long-term exposure may cause chronic irritation of the nose, throat and bronchial passages. Chronic fluoride poisoning may result in bone changes (fluorosis) or calcium metabolism disorders.			
CARCINOGENICITY LISTS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">IARC Monograph: No</td> <td style="width: 33%;">NTP: No</td> <td style="width: 33%;">OSHA: No</td> </tr> </table>	IARC Monograph: No	NTP: No	OSHA: No
IARC Monograph: No	NTP: No	OSHA: No		

Section IV – First Aid Measures

Eyes:	Immediately flush eyes (holding eyelids apart) with plenty of water for at least 15 minutes. Get medical attention.
Skin:	Immediately flush skin with plenty of water while removing contaminated clothing. Get medical attention if irritation develops or persists.
Ingestion:	Do not induce vomiting. Drink large amounts of water (or milk if available) to dilute the acid. Prevention of absorption of the fluoride ion following ingestion can be obtained by giving milk, chewable calcium carbonate tablets or milk of magnesia to conscious victims. Get medical attention immediately.
Inhalation:	Remove to fresh air. If breathing has stopped, give artificial respiration. If breathing with difficulty, give oxygen. Observe for possible delayed reaction.

Section V – Fire Fighting Measures			
Flash Point:	Non-flammable	Autoignition Temperature:	Not Applicable
Lower Explosive Limit:	Not Applicable	Upper Explosive Limit:	Not Applicable
Unusual Fire and Explosion Hazards:	Hydrofluosilicic Acid is not flammable however the following hazards can occur during a fire: reacts with many metals to produce flammable and explosive hydrogen gas; decomposition occurs above 227°F to produce toxic, irritating and corrosive fumes including SiF ₄ and HF.		
Extinguishing Media:	Chemical type foam, CO ₂ (Carbon Dioxide), dry chemical, water fog.		
Special Firefighting Procedures and Equipment:	Keep personnel removed from and upwind of fire. Wear full fire-fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Cool containers containing hydrofluosilicic acid with water spray to prevent rupture.		

Section VI – Accidental Release Measures	
Small Spill:	Neutralize acid spill with alkali such as soda ash, sodium bicarbonate, limestone or lime. Absorb material with an inert material such as sand, vermiculite, diatomaceous earth or other absorbant material and place in chemical waste container to be disposed at an appropriate waste disposal facility according to current applicable laws and regulations and product characteristics at time of disposal. Adequate ventilation is required for soda ash due to the release of carbon dioxide gas. No smoking in spill area.
Large Spill:	Contain spill with dikes and transfer the material to appropriate containers for reclamation or disposal. Absorb remaining spill with an inert material such as sand, vermiculite or other absorbant material and place in chemical waste container to be disposed at an appropriate waste disposal facility according to current applicable laws and regulations and product characteristics at time of disposal. Neutralize residue with alkali such as soda ash, sodium bicarbonate, limestone or lime. Adequate ventilation is required for soda ash due to the release of carbon dioxide gas. No smoking in spill area.
Release Notes:	If spill could potentially enter any waterway, including intermittent dry creeks, contact the local authorities. If in the U.S., contact the US COAST GUARD NATIONAL RESPONSE CENTER toll free number 800-424-8802. In case of accident or road spill notify: CHEMTREC IN USA at 800-424-9300; CANUTEC in Canada at 613-996-6666 CHEMTREC in other countries at (International code)+1-703-527-3887.
Comments:	See Section XIII for disposal information and Section XV for regulatory requirements. Large and small spills may have a broad definition depending on the user's handling system. Therefore, the spill category must be defined at the point of release by technically qualified personnel.

Section VII – Handling and Storage	
Ventilation:	Use with adequate ventilation.
Handling:	Use appropriate personal protective equipment as specified in Section VIII. Avoid contact with skin and eyes. Avoid inhalation and ingestion.
Storage:	Store in unopened container in cool, well ventilated area, away from potential sources of heat and fire. Keep away from combustible materials, strong bases and metals. Large storage tanks should be bermed and electrically grounded. Avoid using glass, metal or stoneware containers.

Section VIII – Exposure Controls/ Personal Protection	
Engineering Controls:	Good ventilation should be sufficient to control airborne levels.
Personal Protection:	
Eye Protection:	Wear chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent) when eye and face contact is possible due to splashing or spraying of material.
Protective Clothing:	Where contact is likely, wear chemical-resistant gloves, a chemical suit, rubber boots and chemical safety goggles plus a face shield.
Respiratory Protection:	Wear NIOSH approved respiratory protective equipment when vapor or mists may exceed applicable concentration limits.
Other Protective Clothing or Equipment:	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Section IX – Physical and Chemical Properties

Appearance/Color/Odor:	Clear, colorless liquid with sour penetrating odor	Boiling Point:	Decomposes at 227°F
Melting Point/Range:	-1 to -4°F	Boiling Point Range:	Not Available
Solubility in Water:	Complete	Vapor Pressure (mmHg):	24 mm Hg @ 77°F
Specific Gravity:	1.2 @ 75°F	Molecular Weight:	144
Vapor Density:	Not Applicable	% Volatiles:	Not Applicable
Bulk Density:	10 lbs/gal	Evaporation Rate:	Not Applicable
pH:	1.5-2.0 in 10% solution	Freezing Point:	Not Applicable
Viscosity:	Not Applicable	Density:	Not Available

Section X – Stability and Reactivity

Stability:	This product is stable under normal conditions of storage, handling and use.
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	High temperatures above 194°F. Hydrofluosilicic acid attacks glass and stoneware. Since hydrofluosilicic acid may react violently with water and generate heat, use caution if dilution is necessary. Always add acid to water, not water to acid.
Materials to Avoid (Incompatibles):	Strong alkalis, metals, glass, stoneware, strong concentrated acids such as sulfuric and perchloric acid, chlorites, combustible solids and organic peroxides. Hydrofluosilicic acid may react violently with water. It may dissociate to form extremely toxic hydrofluoric acid (HF).
Hazardous Decomposition Products:	Reacts with many metals to produce flammable and explosive hydrogen gas, decomposition occurs above 227°F to produce toxic, irritating and corrosive fumes of fluorides including SiF ₄ and HF.

Section XI – Toxicological Information

Significant Routes of Exposure:	Eyes, Skin, Respiratory System, Digestive Tract	
Toxicity to Animals:	Acute Oral Toxicity:	No data available.
	Acute Inhalation Toxicity:	No data available.
	Acute Toxicity: Other Routes:	No data available.
	Acute Dermal Toxicity:	No data available.
	Repeated Dose Toxicity:	No data available.
	Eye & Skin Irritation/Corrosion:	No data available.
Special Remarks on Toxicity to Animals:	Developmental Toxicity/Teratogenicity:	No data available.
	Bacterial Genetic Toxicity In-Vitro: Gene Mutation:	No data available.
	Non-Bacterial Genetic Toxicity In-Vitro: Chromosomal Aberration:	No data available.
	Toxicity to Reproduction:	No data available.
	Carcinogenicity:	No data available.
Other Effects on Humans:	No data available.	
Special Remarks on Chronic Effects on Humans	No data available.	
Special Remarks on Other Effects on Humans:	No data available.	

Section XII – Ecological Information

Ecotoxicity	EPA Ecological Toxicity rating :	No data available.
	Acute Toxicity to Fish:	No data available.
	Chronic Toxicity to Fish:	No data available.
	Acute Toxicity to Aquatic Invertebrates:	(Frog) Subcutaneous: LD _{LO} = 140 mg/kg.
	Chronic Toxicity to Aquatic Invertebrates:	No data available.
	Acute Toxicity to Aquatic Plants:	No data available.
	Toxicity to Soil Dwelling Organisms:	No data available.
	Toxicity to Terrestrial Plants:	No data available.
Environmental Fate:	Stability in Water:	Product is NSF certified to ANSI Standard 60 for the fluoridation of municipal water supplies.
	Stability in Soil:	No data available.
	Transport and Distribution:	No data available.
Toxicity:	No data available	
Degradation Products:	Biodegradation:	No data available.
	Photodegradation:	No data available.

Section XIII – Disposal Considerations

Product Disposal:	Dispose of waste at an appropriate waste disposal facility according to applicable laws and regulations. Neutralize with lime or other base. Collect in appropriate containers. Dispose of at an appropriate waste disposal facility in accordance with current applicable laws and regulations and product characteristics at time of disposal.
General Comments:	None

Section XIV – Transportation Information

	USDOT	TDG - Canada
Proper Shipping Name:	Hydrofluosilicic Acid	Hydrofluosilicic Acid
Hazard Class:	8	8
Identification Number:	UN1778	UN1778
Packing Group (Technical Name):	II	II
Labeling / Placarding:	Corrosive	Corrosive
Authorized Packaging:	Rail: DOT 111A 100 W5 Rubber lined Truck: MC307, 310, 311, 312, DOT 407, 412	
Notes:	1) Packaging must be protected with non-metallic lining impervious to the lading or have a suitable corrosion allowance. 2) Aluminum construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material.	

Section XV – Regulatory Information										
UNITED STATES: SARA Hazard Category:	This product has been reviewed according to the EPA Hazard Categories promulgated under Section 311 and 312 of the Superfund Amendment and reauthorization Act of 1986 (SARA title III) and is considered, under applicable definitions, to meet the following categories:									
	Fire:	No	Pressure Generating:	No	Reactivity:	No	Acute:	Yes	Chronic:	No
	40 CFR Part 355 - Extremely Hazardous Substances:						None			
	40 CFR Part 370 - Hazardous Chemical Reporting:						Applicable			
	All intentional ingredients listed on the TSCA inventory.									
SARA Title III Information:	This product contains the following substances subject to the reporting requirements of Title III (EPCRA) of the Superfund amendments and Reauthorization Act of 1986 and 40 CFR Part 372:									
	Chemical	CAS NO.	Percent by Weight	CERCLA RQ (lbs)	SARA (1986) Reporting					
	Hydrofluosilicic Acid	16961-83-4	24		311	312	313			
					Yes	Yes	No			
CERCLA/Superfund, 40 CFR Parts 117, 302:	If this product contains components subject to substances designated as CERCLA reportable Quantity (RQ) Substances, it will be designated in the above table with the RQ value in pounds. If there is a release of RQ Substance to the environment, notification to the National response Center, Washington D.C. (1-800-424-8802) is required.									
CANADA:	WHMIS Hazard Symbol and Classification:			This product is WHMIS controlled. Category E						
	Ingredient Disclosure List:			This product does contain ingredient(s) on this list.						
	Environmental Protection:			All intentional ingredients are listed on the DSL (Domestic Substance List).						
EINECS#:	(Hydrofluosilicic Acid) 241-034-8									
California: Prop 65:	This is not a chemical known to cause cancer, nor is it listed.									

Section XVI – Other Information				
NFPA Hazard Ratings:	Health: 3	Fire: 0	Reactivity: 1	Special Hazards:
	0 = Insignificant	1 = Slight	2 = Moderate	3 = High 4 = Extreme
COMMENTS:				
Section(s) changed since last revision:	V, IX, XV			
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