

**KAISER ALUMINUM
& CHEMICAL CORPORATION**

**MATERIAL SAFETY
DATA SHEET**

6177 SUNOL BOULEVARD, PLEASANTON, CALIFORNIA 94566-7769

Company / Plant Kaiser Aluminum & Chemical Corporation Old Highway 60 West Mulberry, Florida 33860	Issue Date Revised 7/1/93	Identification Number KDS-57
Trade Name (Common Name or Synonym) Hydrofluosilicic Acid (Fluosilicic Acid; Fluorosilicic Acid)	Emergency Phone Number Kaiser (813)-425-1195 - ChemTrec (800)-424-9300	
Chemical Name Fluorosilicic Acid	Formula H ₂ SiF ₂	DOT Identification Number UN1778

I. INGREDIENTS

BASIC INGREDIENTS	CAS NUMBER	% COMPOSITION BY WEIGHT	ACGIH TWA (mg/m ³)	OSHA 1910.1000 PEL (mg/m ³)
Hydrofluosilicic Acid	16961-83-4	10 - 30 %	Not established	Not established
Hydrogen Fluoride	7664-39-3	0 - 1 %	2.5, as Fluoride	2.5, as Fluoride
Water	—	70 - 90 %	NA	NA

Key: TWA = Time Weighted Average; PEL = Permissible Exposure Limit

II. PHYSICAL DATA

Material is (At Normal Conditions): <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Solid <input type="checkbox"/> Gas <input type="checkbox"/> Other	Appearance and Odor Colorless fuming liquid; pungent, sour penetrating odor.		
Acidity/Alkalinity pH = 1.5-2 (10% sol.)	Melting Point Boiling Point	1.4 to 4 °F 225 °F	Specific Gravity (H ₂ O = 1) 1.17 (25% acid) Solubility in water (% by weight) Completely Soluble Vapor Pressure (mm Hg at 20°C) 24 at 77°F (25% acid)

III. PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection NIOSH/MSHA respirators approved for magnitude of exposure. Use of self-contained breathing apparatus during fire.	Hands, Arms and Body Wear appropriate hand and body protection i.e., neoprene gloves and vinyl protective clothing.
Eyes and Face Wear appropriate eye protection (i.e., chemical safety goggles). Wear face shield to prevent facial contact.	Other Clothing and Equipment Safety shower and eyewash should be in the vicinity of work area.

IV. EMERGENCY MEDICAL PROCEDURES

For skin contact: Remove clothing, irrigate and immediately wash with soap and water. Seek medical attention immediately.
For eye contact: Flush eyes with large amounts of water for 15 minutes. Seek medical attention immediately.
For inhalation: Remove to fresh air. If breathing has stopped, give mouth to mouth resuscitation and seek medical attention immediately.
For ingestion: DO NOT INDUCE VOMITING. Get medical attention immediately.

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V. HEALTH/SAFETY INFORMATION

HEALTH	INHALATION	Inhalation may lead to severe irritation, corrosion, and congestion of respiratory system. Bronchospasm, pulmonary edema, nausea, vomiting, weakness, and stiff joints may occur.
	INGESTION	Vomiting, diarrhea, thirst, cyanosis and symptoms of inhalation exposure can occur.
	SKIN	Skin contact may cause severe irritation, dermatitis, and burns.
	EYES	Severe irritation, burns and keratoconjunctivitis can occur.
	OTHER COMMENTS:	Reproductive abnormalities reported in animals after high doses of fluorides (IARC 27, 237:1982)

Threshold Limit Value See Section I, INGREDIENTS.

FIRE AND EXPLOSION	Flash Point NA °F	Auto Ignition Temperature NA °F	Flammable Limits in Air Lower NA % Upper NA %	Extinguishing Media Will not ignite
	<input checked="" type="checkbox"/> Not Flammable			
Unusual Fire and Explosion Hazards Hydrofluosilicic acid reacts with many metals, giving off highly flammable hydrogen gas which may form explosive mixtures.			Extinguishing Media Not to be Used NA	

REACTIVITY	Stability <input type="checkbox"/> Stable <input checked="" type="checkbox"/> Unstable	Incompatibility (Materials to Avoid) Metals, glass, stoneware, alkali, and strong concentrated acids such as sulfuric acid and perchloric acids.
	Conditions to Avoid	Heating increases vapor pressure.
	Hazardous Decomposition Products	Will decompose to hydrogen fluoride and silicon tetrafluoride on heating. Hydrogen (which forms explosive mixtures with air) formed on contact with metals.

VI. ENVIRONMENTAL

Spill or Leak Procedures
Dike and dilute with water to prevent evolution of toxic vapors. Slowly neutralize, preferably with limestone. The purchaser could establish a spill prevention, control and counter-measure plan. Procedures for proper storage and cleanup of spills or leaks should be part of the plan. Depending on the quantity spilled, notification of the National Response Center (800-424-8802) may be required in the case of hazardous substances. (See EPA, DOT and various state and local regulations.)

Waste Disposal Methods
Used or unused product should be tested to determine hazard status and disposal requirements under federal, state, and local laws and regulations.

VII. ADDITIONAL INFORMATION

1. Store in closed plastic containers away from heat. Do not use metal, glass or stoneware.
2. Special fire fighting procedures include cooling containers with water using fog nozzles. Wear acid-proof personal protective gear and use self-contained breathing apparatus.
3. DOT proper shipping name is Fluorosilicic Acid: Hazard Class 8 (Corrosive); Packing Group II.

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