



MATERIAL SAFETY DATA SHEET

Product Name : 55% Hydrofluoric Acid

Edition Date : Aug. 18, '95

Formula : HF

Revision Date : Feb. 16, '98

SECTION 1. PRODUCER INFORMATION

Manufacturer	: Formosa Plastics Corporation		
Address	: 100, Suei-Guan Rd., Jen Wu Hsiang, Kaohsiung County, Taiwan, R.O.C.		
Telephone	: 886-7-3711411 Ext. 5463		
Emergency Phone	: 886-7-3711411 Ext. 5462	Fax	: 886-7-3710450

SECTION 2. MATERIAL IDENTIFICATION

Chemical Name	: Hydrofluoric Acid, Aqueous							
Synonyms	: AQHF; Hydrofluoride; Fluorohydric Acid							
Hazardous Ingredients			CAS	Exposure Limits			LD	LC
Components	Formula	% wt.	NO.	TWA	STEL	CEILING		
Hydrofluoric Acid	HF	ca 55 %	7664-39-3	3 ppm	6 ppm	2800 - 2900 ppm	25 mg/kg Rat, Intra-peri toneal	1276 ppm/1hr Rat, Inhalation

SECTION 3. PHYSICAL & CHEMICAL PROPERTIES

State	<input type="checkbox"/> Paste <input type="checkbox"/> Powder <input type="checkbox"/> Solid <input checked="" type="checkbox"/> Liquid <input type="checkbox"/> Gas			pH	: < 2
				Appearance	: Colorless, Fuming
				Odor	: Strong, Irritating
Boiling Point	: 97	Melting Point	: - 36	Vapor Pressure	: 68 mmHg at 26.7
Vapor Density (Air = 1)	:			Specific Gravity (H ₂ O = 1)	: 1.218
Evaporation Rate (Ethyl Acetate = 1)	:			Solubility in H ₂ O	: Complete

SECTION 4. FIRE & EXPLOSION DATA

Flash Point	: Nonflammable	Explosion	LEL	: % V/V
Test Method	: <input type="checkbox"/> TOC <input type="checkbox"/> TCC	Limit	UEL	: % V/V
Fire	Extinguishing Media : Use water or CO ₂ to fight fires.			
	Special Fire-fighting Procedures : Wear a fully encapsulating suit and a self-contained breathing apparatus with a full facepiece operated in the pressure-demand or positive-pressure mode.			

SECTION 5. REACTIVITY DATA

Stability	Stable	<input type="checkbox"/>	Conditions to Avoid : Reaction with cyanides or sulfide may cause release of poisonous cyanide or hydrogen sulfide gas.
	Unstable	<input type="checkbox"/>	
Hazardous Polymerization	May Occur	<input type="checkbox"/>	Hazardous Products of Decomposition : Thermal oxidative decomposition can produce highly corrosive fluoride fumes.
	Will not Occur	<input type="checkbox"/>	
Incompatibilities	Avoid contact with : Glycerol, nitric acid, sodium, cyanogen fluoride, acetic anhydride, ammonium hydroxide, arsenic trioxide. HF attacks glass, concrete, certain metals, natural rubber, leather, and silica-containing materials.		

55% Hydrofluoric Acid (Continued)

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SECTION 6. HEALTH HAZARD DATA

Primary Entry Routes	: <input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Skin Contact <input checked="" type="checkbox"/> Ingestion
Health Hazard Effect	: Acute Effects : External contact—liquid or vapor causes severe irritation of eyes and eyelids which result in prolonged or permanent visual defects or total destruction of eyes. Skin contact may result in severe burns. Inhalation—extreme irritation of respiratory, pulmonary inflammation, congestion. Ingestion—necrosis of esophagus and stomach with nausea, vomiting, death. Chronic Effects : May cause fluorosis.
Effects of Overexposure	: Repeated exposure to excessive concentrations over years may cause crippling osteofluorosis which produces increased bone density.
Emergency First Aid	: Inhalation : Remove exposed person to fresh air, administer oxygen. Skin : Immediately remove contaminated clothing and rinse the affected area with plenty of water for at least 20 min. If available, soak in either iced Zephiran (0.13%), Epsom salts, or 70% denatured ethyl alcohol solution. Eyes : Flush immediately, gently but thoroughly with flooding amounts of running water or isotonic saline for at least 15 min. Ingestion : Never give anything by mouth to an unconscious or convulsing person. Do not induce vomiting. Give large quantities of milk or water with milk of magnesia to dilute.

SECTION 7. SPECIAL PROTECTION INFORMATION

Personal Protective Equipment	1. Wear protective eyeglasses or chemical safety goggles. 2. Wear an SCBA. 3. Wear impervious boots, gloves, aprons, and gauntlets.
Ventilation Equipment	Provide general and local explosion-proof ventilation systems.
Storage & Handling Precautions	Store in tightly closed containers in a cool, dry, well-ventilated area away from incompatible materials. Protect containers from physical damage. Store HF in lead carboys and wax or polyethylene bottles.
Hygiene	Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

SECTION 8. SPILL, LEAK, & DISPOSAL PROCEDURES

Spill / Leak	Evacuate nonessential personnel, eliminate all ignition sources immediately, and provide maximum ventilation. Cleanup personnel need wear suitable protective equipment. Cover and neutralize spills with a sodium carbonate/slaked lime mixture and flush with large quantities of water. Keep waste out of sewers, watersheds, and waterways. Thoroughly wash all porous surfaces since they absorb HF and become a hazard for an indefinite time.
Disposal	Place neutralized slurry in appropriate disposal containers. Contact supplier or a licensed contractor for detailed recommendations. Follow local regulations.

SECTION 9. TRANSPORTATION DATA

UN No.	1790	Hazard Class	8	Hazard Labels	Corrosive, Poison
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NOTICE : The above information is accurate to the best of our knowledge. This MSDS is provided without any warranty expressed or implied, including merchantability or fitness for any particular purpose.