

### Section 1: Product and Company Identification

**Middlesex Gases & Technologies**

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Product Code: Hydrogen Fluoride

### Section 2: Hazards Identification



**Danger**

**Hazard Classification:**

Acute Dermal Toxicity (Category 1)  
Acute Oral Toxicity (Category 2)  
Gases Under Pressure

**Hazard Statements:**

Contains gas under pressure; may explode if heated  
Fatal if swallowed  
Fatal in contact with skin

**Precautionary Statements**

**Prevention:**

Wash thoroughly after handling.  
Do not get in eyes, on skin, or on clothing.  
Wear protective gloves and protective clothing.  
Do not eat, drink or smoke when using this product.

**Response:**

If swallowed: Rinse mouth. Do NOT induce vomiting.  
Take off immediately all contaminated clothing and wash it before reuse.  
Wash with plenty of water  
Immediately call a poison center or doctor.

**Storage:**

Protect from sunlight.  
Store in well-ventilated place.  
Store locked up.

**Disposal:**

Dispose of contents and/or container in accordance with applicable regulations.

**Section 3: Composition/Information on Ingredients**

<b>CAS #</b>
7664-39-3

Chemical Substance	Chemical Family	Trade Names
Hydrogen Fluoride		anhydrous hydrofluoric acid; hf-a; hydrofluoric acid

**Section 4: First Aid Measures**

Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Flush skin with water.	Flush eyes with large amounts of water for at least 15 minutes	Rinse mouth with water. Seek medical attention immediately. Do not give anything by mouth to an unconscious person.	Move to fresh air	Not available

**Section 5: Fire Fighting Measures**

Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Nonflammable. Use extinguishing media suitable for surrounding fire.	Not applicable	▪ Not applicable

**Section 6: Accidental Release Measures**

Personal Precautions	Environmental Precautions	Methods for Containment
Always wear recommended personal protective equipment	Do not let product enter waterways.	Stop leak if without risk and provide ventilation.

Methods for Cleanup	Other Information
Soak up spill with inert material.	

**Section 7: Handling and Storage**

Handling	Storage
Store in cool, well ventilated area of low fire risk and out of direct sunlight	Avoid breathing vapors and liquid contact with eyes, skin or clothing.

**Section 8: Exposure Controls/Personal Protection**

Exposure Guidelines
3 ppm OSHA TWA 6 ppm OSHA STEL (vacated by 58 FR 35338, June 30, 1993) 2 ppm ACGIH ceiling 0.5 ppm ACGIH TWA 3 ppm (2.5 mg/m3) NIOSH recommended TWA 10 hour(s) 6 ppm (5 mg/m3) NIOSH recommended ceiling 15 minute(s)

**Engineering Controls**

No specific controls are needed.

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Eye Protection	Skin Protection	Respiratory Protection
Splash resistant goggles	Chemically resistant clothing	Not applicable

### General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

## Section 9: Physical and Chemical Properties

Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Liquid	Colorless	Clear	N/A	Gas	Irritating odor	N/A

Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Not applicable	Not applicable	9.6	Not applicable	Not applicable	Not applicable

Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
68 F (20 C)	-117 F (-83 C)	760 mmHg @ 20 C	0.7	0.987-0.991	Reacts violently	Acidic in solution	0.03-0.11 mg/m3	N/A	0.256 cP @ 0 C (liquid)

Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
20.01 g/mole	FH	0.0517 lb/ft3	N/A	100%	N/A	

## Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Stable at normal conditions.	Stable at normal conditions.	Extremely reactive with alkalis. Incompatible with metals.

Hazardous Decomposition Products	Possibility of Hazardous Reactions
Not typical under normal conditions.	May polymerize

## Section 11: Toxicology Information

### Acute Effects

Oral LD50	Dermal LD50	Inhalation
LC50 Inhalation - rat - 1 h -	LD50 Intraperitoneal Rat 25 mg/kg	Burns

Eye Irritation	Skin Irritation	Sensitization
Burns	Burns	Harmful if inhaled, burns respiratory tract, skin, eye, mucous membranes

### Chronic Effects

Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
A4 (Not classifiable for humans or animals.) by ACGIH, 3 (Not classifiable for humans.) by IARC	Not Available	Not Available	No data

## Section 12: Ecological Information

### Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Fish toxicity: 51 mg/L 96 hours LC50 Oncorhynchus mykiss Invertebrate toxicity: 97 mg/L 48 hours EC50 (hard water)	Subject to biodegradation	Not Available	Highly volatile in water

Daphnia magna Algal toxicity: 43 mg/L 96 hours EC50 Scenedesmus subspicatus Phyto toxicity: Not Available Other toxicity: Not Available			
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## Section 13: Disposal Considerations

Disposal must comply with federal, state, and local disposal or discharge laws.

## Section 14: Transportation Information

### U.S. DOT 49 CFR 172.101

Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Hydrogen fluoride, anhydrous	UN1052	8	I	8, 6.1	Forbidden	Forbidden	N/A

### Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
Hydrogen fluoride, anhydrous	UN1052	8, 6.1	I

## Section 15: Regulatory Information

### U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
100 RQ	100 TPQ	100 RQ

### SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
Yes	Yes	No	Yes	Yes

### SARA 372.65

HYDROGEN FLUORIDE, (as F)

### OSHA Process Safety

1000 LBS TQ

### State Regulations

#### CA Proposition 65

Not regulated.

### Canadian Regulations

#### WHMIS Classification

A, E

### National Inventory Status

US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Listed on inventory.	Not listed.	Not determined.

# Section 16: Other Information

<b>NFPA Rating</b>
HEALTH=3 FIRE=0 REACTIVITY=2

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard