



## 4. First-aid measures

P304+313 +341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Consult a physician.  
P302+352 IF ON SKIN: Wash with soap and water. Check for frost bite.  
P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Check for frostbite. Remove contact lenses if present and easy to do; continue rinsing.  
P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
Most important symptoms and effects, both acute and delayed: Severe eye irritation. Skin irritation. Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution only in situations of emergency life support.

## 5. Firefighting measures

### Suitable extinguishing equipment:

Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### Emergency procedures:

Fire and Explosion Hazards:

Aerosol cans may erupt with force at temperatures above 49° C (120° F)

Fire decomposition by-products will include hydrofluoric acid, and possibly carbonyl fluoride.

Avoid contact with these materials, which are toxic and irritating. Evacuate personnel immediately in the event of a fire involving this product.

Extinguishing Media: Water Spray, Water fog, Dry Chemical, Carbon dioxide. "Alcohol" foam.

Cool cans with water spray. If gas exiting can ignites, stop flow of gas. Do not put out fire unless leak can be stopped. Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions.

## 6. Accidental release measures

Use personal protective equipment. Avoid breathing, mist or vapors. Ensure adequate ventilation.

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

The chances of a large spill or leak are unlikely in aerosol containers.

If this product is spilled and not recovered, or is recovered as a waste for treatment or disposal, the CERCLA Reportable Quantity is 100 lbs. (Release of an unlisted Hazardous Waste characteristic of ignitability).

## 7. Handling and storage

### Precautions for safe handling:

Avoid contact with skin and eyes. Avoid inhalation of vapors or mist.

Contents under pressure.

### Conditions for safe storage:

Avoid breathing vapors or mist. Keep containers closed. Use only with adequate ventilation. Avoid repeated or prolonged contact with eyes, skin or clothing. Wash thoroughly after handling. Do not store in direct sunlight.

Store in cool dry place, away from heat, sparks or flames which may generate toxic decomposition products.

Vapors are heavy and may concentrate in low poorly ventilated areas.

## 8. Exposure controls / personal protection

Information on the system design:

Product is intended for external use only. Stay up wind, out of any spray developed.

Exposure Limits:

1,1-Difluoroethane	CAS #75-37-6
PEL (OSHA)	None Established
TLV (ACGIH)	None Established
AEL (DuPont)	1000 ppm, 8 Hr. TWA
WEEL (AIHA)	1000 ppm, 8 Hr. TWA

### Personal protective equipment

Product is a gas which is heavier than air. Avoid breathing vapors.

Protect skin from cold discharge.

## 8. Exposure controls / personal protection (continued)

**Engineering Controls** Ground all equipment and cylinders before use. Do not use near any spark producing electrical devices such as paper shredders.

**Respiratory Protection:** Use only with adequate ventilation. Keep container closed. Use approved NIOSH self-contained or supplied air respirators for emergencies and in situations where air may be displaced by vapors.

**Eye Protection:** Use chemical protective safety glasses.

### Hygiene measures

Wash hands and face before breaks and immediately after handling the product.

Handle in accordance with good industrial hygiene and safety practice.

Protective Clothing:

Where there is potential for skin contact, use appropriate impervious gloves, apron, pants and jacket.

## 9. Physical and chemical properties

Appearance:	Liquefied Gas	
Odor:	Slight Ethereal	
Odor threshold:	no data available	
pH-value:	no data available	
Melting/ freezing point:	no data available	
Initial boiling point:	-25°C (-13°F)	
Flash point:	<-50°C (<-58°F)	
Evaporation rate:	no data available	
Flammability (solid, gas):	Flammable	
Explosion limits:	LEL/UEL: 3.9-16.9 (% by volume)	
Vapor pressure:	87 psia at 25°C (77°F)	
Vapor density:	2.4 (Air = 1.0) at 25°C (77°F)	
Relative density (water=1.00):	no data available	Auto-ignition temperature: 454°C (849°F)
Solubility:	0.28 WT% @ 25°C (77°F) and 87 psia.	Decomposition temperature: Not available
Partition coefficient: Log Kow =	no data available	Viscosity: no data available
Fire and Explosion Hazards:	Aerosol cans may erupt forcefully at temperatures above 120°F (49°C)	

## 10. Stability and reactivity

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions: No data.

Conditions to avoid: Open flames and high temperatures.

Materials to avoid: No data.

Hazardous decomposition products: See Section 5 for action by fire.

## 11. Toxicological information

**Routes of Entry:** Inhalation.

Oral ALD: >1500 mg/kg in rats

Dermal Toxicity LD 50: No data available for gas.

Inhalation ALC, 4 hr: 383,000 ppm in rats

Eye Irritation (Rabbit) No data.

Dermal Irritation (Rabbit) No data.

Chronic Effects on Humans: No data

This product does not contain a substance at a concentration exceeding OSHA thresholds that has been listed as a carcinogen or potential carcinogen published by NTP, IARC or OSHA.

Reproductive toxicity no data available

Specific target organ toxicity - single exposure no data available

Specific target organ toxicity - repeated exposure no data available

Aspiration hazard: no data available

## 12. Ecological information

Ecotoxicity:  
 Aquatic Toxicity: no data available  
 Other adverse effects no data available

## 13. Disposal considerations

Offer surplus and non-recyclable solutions to a licensed disposal company.  
 Reclaim by distillation, incinerate, or remove to a permitted waste facility.  
 Dispose in accordance with local, state and federal regulations.  
 This material may be a RCRA Hazardous waste upon disposal due to the ignitability characteristic.

## 14. Transport information

DOT (US)  
 UN number: 1030      Class: 2.1  
 Proper shipping name:      1,1-DIFLUOROETHANE  
 Reportable Quantity (RQ):      None  
 Marine pollutant: No data      Poison Inhalation Hazard: No data  
 Special precautions for local transport or conveyance: None  
 May also be classed as a Consumer Commodity ORM-D  
 The description shown may not apply to all shipping situations. Consult 49CFR, OSHA or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name, labeling) and mode-specific or quantity-specific shipping requirements. Not Restricted as per IATA, Special Provisions A46.

## 15. Regulatory information

SARA 302: None subject to the reporting requirements of SARA Title III, Section 302.  
 SARA 313: None that exceed the threshold reporting levels established by SARA Title III, Section 313.  
 SARA 311/312 Hazards  
 Acute : Yes      Chronic : No      Fire : Yes      Reactivity : No      Pressure : Yes  
 Right To Know Components: No information

California Prop 65: This product will not expose you to chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.  
 This product is a flammable gas as defined by OSHA in 29CFR 1910.1200(c). Use of this product may require compliance with 29CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals. This information must be included in all MSDS that are copied and distributed for this material.  
 California V.O.C. Data:      This product contains 0 grams total VOC per liter.

## 16. Other information

Hazard Categories:	Health	Fire	Pressure	Reactivity	Reference 49 CFR 171.8,
Immediate	Yes	Yes	Yes	No	OSHA 29 CFR 1910.1200 and SARA 302/311/312/313.
Delayed	No	No	XXX	XXX	
HMIS Hazard ratings: Health 1    Fire 4    Instability 0    Other B (Goggles, gloves)					
Hazard Ratings: Least: 0    Slight: 1    Moderate: 2    High: 3    Extreme: 4					

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 WHIMIS - Canada  
 Class A - Compressed Gas Class B-1 - Flammable Gas CEPA DSL: difluoroethane