

MATERIAL SAFETY DATA SHEET

SECTION – 1 : CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name	: Difluoromethane (R32)
Synonyms	: Methylene fluoride; Carbon fluoride hydride (CF ₂ H ₂); Freon 32; Difluoromethane; Genetron 32; Methylene difluoride; CH ₂ F ₂ ; R 32
Manufacturer/Supplier Name	: M/s GUJARAT FLUOROCHEMICALS LIMITED
Address	: Survey No 16/3, 26, 27, Ranjitnagar Pin-389 380, Tal. Ghoghamba, Dist. Panchmahals, Gujarat,
Business Phone	: +91 – 2678 – 248107, 248152
Business Fax	: +91 – 2678 – 248153
Web Site	: www.gfl.co.in

SECTION – 2 : COMPOSITION, INFORMATION ON INGREDIENTS SECTION

Chemical Name	: Difluoromethane (R32)
CAS No.	: 75-10-5
Physical Form	: Liquefied Gas

SECTION – 3 : HAZARDS IDENTIFICATION

Physical state Emergency overview: Gas. [Liquefied gas],

Extremely Flammable Gas. May cause flash fire. May be harmful if swallowed. Can cause target organ damage.

Keep away from heat, sparks and flame. Do not ingest. Can cause target organ damage. Use only with adequate ventilation. Wash thoroughly after handling. Keep container closed. Contact with rapidly expanding gases can cause frostbite

Target organs : Causes damage to the following organs: central nervous system (CNS).

Routes of entry : Inhalation

Eyes : Liquid can cause burns similar to frostbite

Skin : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite

Inhalation: Acts as a simple asphyxiant.

Ingestion: Ingestion is not a normal route of exposure for gases

Potential chronic health Effect: Carcinogenic Effects : Not available. Mutagenic Effects: Not available. Teratogenic Effects : Not available.

Medical conditions aggravated by over- exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

Pictogram



Signal word

Danger

NFPA – Health : 1, Fire: 4, Reactive : 1

SECTION – 4 : FIRST AID MEASURES

Inhalation: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion: As this product rapidly becomes a gas when released, refer to the inhalation section

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye contact: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately

Skin contact: In case of contact with liquid, warm frozen tissues slowly with lukewarm water. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately

SECTION – 5 : FIRE FIGHTING MEASURES

Flammability of the product: Flammable

Auto-ignition temperature: 647.13°C (1196.8°F)

Flammable limits: Lower: 14% Upper: 31%

Products of combustion: Decomposition products may include the following materials: carbon dioxide
carbon monoxide halogenated compounds

Fire-fighting media and instructions: Apply water from a safe distance to cool container and protect surrounding area. If involved in fire, shut off flow immediately if it can be done without risk. Contains gas under pressure. Extremely flammable liquefied gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode

SECTION – 6 : ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Avoid breathing fumes, vapors, mists or gas. Ventilate area.

Remove all sources of ignition. Evacuate personnel.

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers

Methods and materials for containment and cleaning up: Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see section 1 for emergency contact information and section 13 for waste disposal

SECTION – 7 : HANDLING AND STORAGE SECTION

Precautions for safe handling: Wash thoroughly after handling. High pressure gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Do not ingest

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area

SECTION – 8 : EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Control : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Personal protective equipment

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts

Skin: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hand : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn.

Personal protection in case of large spill: Self-contained breathing apparatus (SCBA) should be used to avoid inhalation of the product

SECTION – 9 : PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Molecular Weight: 52.03 g/mole

Molecular Formula: C-H₂-F₂

Boiling / Condensation point: 30°C (86°F)

Melting / freezing point: -136°C(-212.8°F)

Critical Temperature: 78.45°C (173.2°F)

Vapor Density: 3.82 (air = 1)

Gas Density (lb/ft³): Not available

SECTION – 10 : STABILITY AND REACTIVITY

Chemical

Stability & Reactivity: The product is stable

Incompatibility with various substances: Highly reactive or incompatible with the following materials: oxidizing materials and acids

Hazardous decomposition product : Under normal conditions of storage and use, hazardous decomposition products should not be produced

Hazardous Polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur.

SECTION – 11 : TOXICOLOGICAL INFORMATION

Toxicity data

Product/ingredient name	Result	Species	Dose	Exposure
Difluoromethane	LD50 Oral	Rat	1890 mg/kg	-
	LC50 Inhalation Va	Rat	1890 g/m ³	4 hours
	LC50 Inhalation Ga	Rat	3780 mg/m ³	1 hours

Chronic effects on humans : Causes damage to the following organs: central nervous system (CNS).

Other toxic effects on Human : No specific information is available in our database regarding the other toxic effects of

Specific effects

Carcinogenic effects: No known significant effects or critical hazards.

Mutagenic effects: No known significant effects or critical hazards

Reproduction toxicity: No known significant effects or critical hazards

SECTION – 12 : ECOLOGICAL INFORMATION

Aquatic EcoToxicity: No data available

Product of degradation: Products of degradation: carbon oxides (CO, CO₂) and water, halogenated compounds

Environmental fate: Not available

Environmental Hazard: No known significant effects or critical hazards

Toxicity to the Environment: Not available

SECTION – 13 : DISPOSAL CONSIDERATIONS

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation.

Return cylinders with residual product to Airgas, Inc. Do not dispose of locally

SECTION – 14 : TRANSPORT INFORMATION

DOT

DIFLUOROMETHANE OR REFRIGERANT GAS R 32 Class : 2.1 UN3252

Packing group – Not applicable (Gas)

Label –



TDG Classification

DIFLUOROMETHANE OR REFRIGERANT GAS R 32 Class : 2.1 UN3252

Packing group – Not applicable (Gas)

Label –



Mexico Classification –

DIFLUOROMETHANE OR REFRIGERANT GAS R 32 Class : 2.1 UN3252

Packing group – Not applicable (Gas)

Label –



 **SECTION – 15 : REGULATORY INFORMATION**

United States

U.S. Federal regulations

United States inventory (TSCA 8b): This material is listed or exempted.

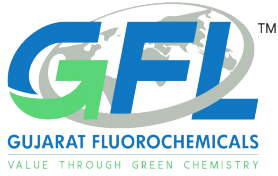
SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: No products were found.

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.

Clean Water Act (CWA) 307: No products were found.



Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found

State regulations

Connecticut Carcinogen Reporting: This material is not listed.

Connecticut Hazardous Material Survey: This material is not listed.

Florida substances: This material is not listed.

Illinois Chemical Safety Act: This material is not listed.

Illinois Toxic Substances Disclosure to Employee Act: This material is not listed.

Louisiana Reporting: This material is not listed.

Louisiana Spill: This material is not listed.

Massachusetts Spill: This material is not listed.

Massachusetts Substances: This material is not listed.

Michigan Critical Material: This material is not listed.

Minnesota Hazardous Substances: This material is not listed.

New Jersey Hazardous Substances: This material is not listed.

New Jersey Spill: This material is not listed.

New Jersey Toxic Catastrophe Prevention Act: This material is not listed.

New York Acutely Hazardous Substances: This material is not listed.

New York Toxic Chemical Release Reporting: This material is not listed.

Pennsylvania RTK Hazardous Substances: This material is not listed.

Rhode Island Hazardous Substances: This material is not listed

Canada

WHMIS (Canada)

Class A: Compressed gas.

CEPA Toxic substances: This material is listed.

Canadian ARET: This material is not listed.

Canadian NPRI: This material is listed.



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Alberta Designated Substances: This material is not listed.

Ontario Designated Substances: This material is not listed.

Quebec Designated Substances: This material is not listed

 **SECTION – 16 : ADDITIONAL INFORMATION**

References: Not available.

Other Special Considerations: Not available.

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The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the Composition and hazards of the product. Since conditions of use are outside our control, we make no Warranties, express or implied, and assume no liability in connection with any use of this information.