

1. Identification of the Substance/Preparation and the Company

Product Identifier:

- **Product Name:** R32
- **Chemical Name:** Difluoromethane
- **Synonyms:** HFC-32, Methylene difluoride
- **CAS Number:** 75-10-5
- **EC Number:** 200-839-4
- **REACH Registration Number:** Not applicable (substance exempted)

Relevant Identified Uses of the Substance:

- Refrigerant gas used in air conditioning, refrigeration systems, and heat pumps.

Details of the Supplier of the SDS:

- **Company Name:** Gaslogic B.V.
- **Address:** Overschieweg 105, 3044 EH, Rotterdam.
- **Telephone Number:** +31 103 22 09 94
- **Email Address:** info@gaslogic.nl

Emergency Telephone Number:

- +44 344 892 0111 (Available 24 hours)

2. Hazards Identification

2.1 Classification of the Substance

According to Regulation (EC) No 1272/2008 (CLP):

- **Physical Hazards:**
 - Flammable Gas – Category 1 (H220)
 - Gases Under Pressure – Liquefied Gas (H280)
- **Health Hazards:**
 - Not classified as hazardous.
- **Environmental Hazards:**
 - Not classified as hazardous.

2.2 Label Elements

- **Pictograms:**



- **Signal Word:** Danger
- **Hazard Statements:**
 - **H220:** Extremely flammable gas.
 - **H280:** Contains gas under pressure; may explode if heated.
- **Precautionary Statements:**
 - **P210:** Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
 - **P377:** Leaking gas fire: Do not extinguish unless leak can be stopped safely.
 - **P410 + P403:** Protect from sunlight. Store in a well-ventilated place.

2.3 Other Hazards

- **Frostbite risk:** Contact with liquid form can cause cold burns or frostbite.
- **Asphyxiation risk:** High concentrations can displace oxygen in confined spaces, leading to suffocation.

3. Composition / Information on Ingredients

Substance	CAS Number	EC Number	Concentration (%)
Difluoromethane (R32)	75-10-5	200-839-4	100%

4. First Aid Measures

4.1 Description of First Aid Measures

- **Inhalation:**
 - Move the affected person to fresh air immediately.
 - Administer oxygen if breathing is difficult.
 - Seek medical attention if symptoms such as dizziness, headache, or nausea persist.
- **Skin Contact:**
 - In case of skin contact with liquid refrigerant, flush the affected area with lukewarm water for at least 15 minutes.
 - Do not rub the skin; seek medical attention for frostbite.
- **Eye Contact:**
 - Immediately flush eyes with plenty of lukewarm water for at least 15 minutes.
 - Seek medical attention if irritation persists or if injury is suspected.
- **Ingestion:**
 - Ingestion is not considered likely due to the gaseous state.
 - If ingestion occurs, seek immediate medical attention.

4.2 Most Important Symptoms and Effects

- **Acute effects:** Dizziness, headache, and confusion from inhalation of high concentrations.
- **Skin contact:** Frostbite or cold burns from contact with liquid refrigerant.

4.3 Indication of Immediate Medical Attention

- Immediate medical attention is required for frostbite or in cases of high inhalation exposure that causes asphyxiation.

5. Fire-Fighting Measures

5.1 Extinguishing Media

- **Suitable Extinguishing Media:** Use CO₂, dry chemical powder, or water spray.
- **Unsuitable Extinguishing Media:** Do not use water jets, as they may spread the fire.

5.2 Special Hazards Arising from the Substance

- **Explosion risk:** Containers may explode if exposed to heat or fire.
- **Toxic gases:** Burning may release toxic gases, including hydrogen fluoride and carbonyl fluoride.

5.3 Advice for Firefighters

- Wear self-contained breathing apparatus (SCBA) and full protective gear.
- Cool containers with water spray to prevent explosions.

6. Accidental Release Measures

6.1 Personal Precautions, Protective Equipment, and Emergency Procedures

- Evacuate personnel to a safe area and ensure proper ventilation.
- Use appropriate personal protective equipment (PPE), such as cold-resistant gloves and eye protection.
- Eliminate all sources of ignition.

6.2 Environmental Precautions

- Prevent release into the environment.
- Allow gas to disperse in a well-ventilated area.

6.3 Methods and Material for Containment and Cleaning Up

- Stop the release if it is safe to do so.
- Allow the gas to disperse naturally in a ventilated area.

7. Handling and Storage**7.1 Precautions for Safe Handling**

- Avoid inhalation of the gas.
- Use in well-ventilated areas.
- Keep away from heat, sparks, and open flames.

7.2 Conditions for Safe Storage

- Store in a cool, dry, well-ventilated place away from direct sunlight and ignition sources.
- Keep containers upright and secure to prevent movement or damage.
- Ensure containers are properly labeled and closed.

8. Exposure Controls / Personal Protection**8.1 Control Parameters**

Substance	Occupational Exposure Limits (OELs)
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Difluoromethane (R32)	1,000 ppm (TWA)
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8.2 Exposure Controls**Engineering Controls:**

- Ensure proper ventilation in confined or enclosed spaces.
- Use gas detection systems to monitor air quality.

Personal Protective Equipment:

- **Respiratory Protection:** Use an approved respirator if exposure limits are exceeded or in case of insufficient ventilation.
- **Hand Protection:** Use cold-resistant gloves when handling liquid refrigerant.
- **Eye Protection:** Use safety goggles or a face shield when handling liquid refrigerant.
- **Skin Protection:** Wear protective clothing to avoid skin exposure to liquid refrigerant.

9. Physical and Chemical Properties

Property	Value
Physical State	Gas at ambient temperature
Appearance	Colorless gas
Odor	Slight ether-like odor
Melting Point	-136°C
Boiling Point	-51.7°C
Flash Point	Not applicable
Vapor Pressure	1,200 kPa at 25°C
Vapor Density	2.2 (air = 1)
Solubility in Water	Slight
Partition Coefficient (Kow)	Not available
Auto-ignition Temperature	651°C
Decomposition Temperature	>400°C

10. Stability and Reactivity

10.1 Reactivity

- Not reactive under normal conditions.

10.2 Chemical Stability

- Stable under recommended storage and handling conditions.

10.3 Possibility of Hazardous Reactions

- No hazardous reactions are expected under normal use.

10.4 Conditions to Avoid

- Avoid heat, sparks, open flames, and direct sunlight.

10.5 Incompatible Materials

- Strong oxidizing agents, alkali metals, and powdered metals.

10.6 Hazardous Decomposition Products

- Thermal decomposition may release toxic gases, such as hydrogen fluoride and carbonyl fluoride.

11. Toxicological Information

11.1 Information on Toxicological Effects

Acute Toxicity:

- **Inhalation:** Inhalation of high concentrations can cause dizziness, drowsiness, or asphyxiation.
- **Skin and Eye Contact:** Liquid refrigerant can cause frostbite or cold burns.

Skin Corrosion/Irritation:

- Direct contact with liquid refrigerant may cause frostbite and severe skin damage.

Serious Eye Damage/Irritation:

- Exposure to liquid refrigerant can cause serious eye damage.

Respiratory or Skin Sensitization:

- Not classified as a sensitizer.

Carcinogenicity:

- Not classified as carcinogenic by IARC, NTP, or OSHA.

Germ Cell Mutagenicity:

- Not classified as mutagenic.

Reproductive Toxicity:

- Not classified as toxic to reproduction.

STOT – Single Exposure:

- May cause dizziness, drowsiness, and respiratory irritation at high concentrations.

Aspiration Hazard:

- Not applicable (gaseous state).
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12. Ecological Information**12.1 Toxicity**

- Low toxicity to aquatic organisms.
 - **LC50 (Fish, 96h):** Not available
 - **EC50 (Daphnia, 48h):** Not available

12.2 Persistence and Degradability

- Difluoromethane is expected to be persistent in the atmosphere and contribute to global warming.

12.3 Bioaccumulative Potential

- Low bioaccumulation potential due to high volatility.

12.4 Mobility in Soil

- Highly volatile and expected to partition to the atmosphere.

12.5 Results of PBT and vPvB Assessment

- Not classified as Persistent, Bioaccumulative, and Toxic (PBT) or very Persistent and very Bioaccumulative (vPvB).

13. Disposal Considerations**13.1 Waste Treatment Methods**

- **Product Disposal:** Recover or recycle if possible. Dispose of according to local, regional, and national regulations.
- **Packaging Disposal:** Empty containers should be returned to the supplier or disposed of in accordance with local regulations.

14. Transport Information (Extended Chapter)**14.1 UN Number**

- **UN 3252**

14.2 UN Proper Shipping Name

- **Difluoromethane (R32)**

14.3 Transport Hazard Class(es)

- **Class 2.1 (Flammable Gas)**

14.4 Packing Group

- Not applicable (gases do not have a packing group).

14.5 Environmental Hazards

- Not classified as a marine pollutant.

14.6 Special Precautions for User

- Ensure adequate ventilation during transport, especially in confined spaces.
- Cylinders must be secured upright and protected from physical damage during transport.
- Ensure the containers are properly labeled with the UN number, hazard class, and correct shipping name.

14.7 Transport in Bulk According to Annex II of MARPOL and the IBC Code

- Not applicable, as R32 is transported in cylinders and not in bulk.

14.8 Additional Transport Information**Transport by Road/Rail (ADR/RID):**

- **Classification Code:** 2F (Flammable Gases)
- **Tunnel Restriction Code:** (B/D) – Prohibited in tunnels of category B when transported in bulk.

Transport by Sea (IMDG):

- **EMS Code:** F-D, S-U
- **Stowage:** Keep away from heat sources and store in well-ventilated areas.

Transport by Air (IATA):

- **Packing Instruction:** 200
- **Passenger Aircraft:** Limited to smaller quantities.
- **Cargo Aircraft Only:** Larger quantities are allowed but must be properly stowed and ventilated.

Special Handling Instructions:

- Ensure personnel handling R32 are trained in the transport of flammable gases.
- Inspect cylinders for leaks or damage before transport. Ensure all containers have pressure-relief devices if required.
- Comply with local and international regulations governing the transportation of compressed gases.

15. Regulatory Information**15.1 Safety, Health, and Environmental Regulations/Legislation Specific for the Substance**

- **EU Regulations:**
 - **REACH Registration:** Exempt under REACH.
 - **CLP Regulation (EC) No 1272/2008:** Classified and labeled according to CLP regulation.
 - **F-gas Regulation:** Subject to the F-gas regulations.

15.2 Chemical Safety Assessment

- A chemical safety assessment has not been conducted for this substance.

16. Other Information**Key Abbreviations:**

- **PBT:** Persistent, Bioaccumulative, Toxic
- **vPvB:** Very Persistent, Very Bioaccumulative
- **LC50:** Lethal Concentration for 50% of organisms
- **EC50:** Effective Concentration for 50% of organisms

Training Advice:

- Personnel handling R32 should be trained in proper handling, storage, and emergency procedures, especially for pressurized flammable gases.

Disclaimer:

- The information provided in this SDS is correct to the best of our knowledge based on available information at the time of publication. This SDS is intended to provide guidance on safe handling, use, processing, storage, transportation, and disposal. It should not be considered a guarantee of specific product properties.