
1. Identification of the Substance/Preparation and the Company

Product Identifier:

- **Product Name:** R410A
- **Chemical Name:** Mixture of Difluoromethane (HFC-32) and Pentafluoroethane (HFC-125)
- **Synonyms:** Genetron® AZ-20, Suva® 9100, Forane® 410A
- **CAS Numbers:**
 - Difluoromethane: 75-10-5
 - Pentafluoroethane: 354-33-6
- **EC Numbers:**
 - Difluoromethane: 200-839-4
 - Pentafluoroethane: 206-557-8
- **REACH Registration Number:** Not applicable (mixture)

Relevant Identified Uses of the Substance:

- Refrigerant gas used in air conditioning and refrigeration systems, particularly in residential and commercial HVAC systems.

Details of the Supplier of the SDS:

- **Company Name:** Gaslogic B.V.
- **Address:** Overschiesweg 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:**
 - Gases Under Pressure – Liquefied Gas (H280)
- **Health Hazards:**
 - Not classified as hazardous.
- **Environmental Hazards:**
 - Not classified as hazardous.

2.2 Label Elements

- **Pictogram:**



- **Signal Word:** Warning
- **Hazard Statements:**
 - **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 refrigerant may cause frostbite or cold burns.
- **Asphyxiation risk:** High concentrations in enclosed spaces can displace oxygen, leading to suffocation.

3. Composition / Information on Ingredients

Substance	CAS Number	EC Number	Concentration (%)
Difluoromethane (HFC-32)	75-10-5	200-839-4	50%
Pentafluoroethane (HFC-125)	354-33-6	206-557-8	50%

4. First Aid Measures

4.1 Description of First Aid Measures

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

4.2 Most Important Symptoms and Effects

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

4.3 Indication of Immediate Medical Attention

- Immediate medical attention is required for frostbite or asphyxiation from inhalation.

5. Fire-Fighting Measures

5.1 Extinguishing Media

- **Suitable Extinguishing Media:** Use CO₂, dry chemical, 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 rupture or explode when exposed to fire or heat.
- **Toxic gases:** Combustion may produce toxic gases, including hydrogen fluoride and carbonyl fluoride.

5.3 Advice for Firefighters

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

6. Accidental Release Measures

6.1 Personal Precautions, Protective Equipment, and Emergency Procedures

- Evacuate the area and ensure proper ventilation.
- Use personal protective equipment (PPE), including cold-resistant gloves and goggles.
- Eliminate all ignition sources.

6.2 Environmental Precautions

- Avoid discharge into water bodies or drains.
- Ensure gas is allowed to dissipate in a well-ventilated area.

6.3 Methods and Material for Containment and Cleaning Up

- Stop the leak if it can be done safely.
- Allow the gas to disperse naturally in a ventilated area.

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

- Avoid inhalation of gas or vapors.
- Ensure good ventilation in enclosed spaces.
- Keep away from heat, sparks, and open flames.

7.2 Conditions for Safe Storage

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

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

Substance	Occupational Exposure Limits (OELs)
Difluoromethane (HFC-32)	1,000 ppm (TWA)
Pentafluoroethane (HFC-125)	Not established

8.2 Exposure Controls**Engineering Controls:**

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

Personal Protective Equipment:

- **Respiratory Protection:** Use an approved respirator if exposure limits are exceeded or in poorly ventilated areas.
- **Hand Protection:** Wear 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 direct skin contact with 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	Not available
Boiling Point	-51.5°C
Flash Point	Not applicable
Vapor Pressure	2,610 kPa at 25°C
Vapor Density	3.0 (air = 1)
Solubility in Water	Slight
Partition Coefficient (Kow)	Not available
Auto-ignition Temperature	743°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 exposure to heat, sparks, open flames, and direct sunlight.

10.5 Incompatible Materials

- Strong oxidizing agents and alkali metals.

10.6 Hazardous Decomposition Products

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

11. Toxicological Information

11.1 Information on Toxicological Effects

Acute Toxicity:

- **Inhalation:** High concentrations may cause dizziness, drowsiness, or unconsciousness.
- **Skin and Eye Contact:** Liquid refrigerant can cause frostbite or cold burns.

Skin Corrosion/Irritation:

- Frostbite or cold burns may result from direct contact with liquid refrigerant.

Serious Eye Damage/Irritation:

- Liquid refrigerant may cause serious eye damage upon direct contact.

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).

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

- The components of this product are expected to persist 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, expected to partition into 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 for recycling or disposed of in accordance with local regulations.

14. Transport Information (Extended Chapter)

14.1 UN Number

- UN 3163

14.2 UN Proper Shipping Name

- Liquefied Gas, Flammable, n.o.s. (contains R410A)

14.3 Transport Hazard Class(es)

- Class 2.2 (Non-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 proper ventilation during transport, especially in confined spaces.
- Cylinders must be transported upright and secured to prevent movement or damage.
- Ensure all 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 R410A is transported in cylinders and not in bulk.

14.8 Additional Transport Information

Transport by Road/Rail (ADR/RID):

- **Classification Code:** 2A (Non-flammable, Non-toxic Gas)
- **Tunnel Restriction Code:** (C/E) – Prohibited in tunnels of category C when transported in bulk.

Transport by Sea (IMDG):

- **EMS Code:** F-C, S-V
- **Stowage:** Store away from heat sources and ensure proper ventilation.

Transport by Air (IATA):

- **Packing Instruction:** 200
- **Passenger Aircraft:** Limited to smaller quantities.
- **Cargo Aircraft Only:** Larger quantities are allowed, but ensure proper ventilation and stowage.

Special Handling Instructions:

- Ensure personnel involved in handling and transporting R410A are trained in handling pressurized gases.
- Inspect cylinders for leaks or damage before transport. Ensure all cylinders are equipped with pressure-relief devices where applicable.
- Ensure compliance with all local and international regulations regarding the transportation of compressed gases.

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

- **EU Regulations:**
 - **REACH Registration:** Components of this product are registered under REACH.
 - **CLP Regulation (EC) No 1272/2008:** Classified and labeled according to CLP regulation.
 - **F-gas Regulation:** Subject to restrictions under the F-gas regulations.

15.2 Chemical Safety Assessment

- A chemical safety assessment has not been conducted for this mixture.
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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 R410A should be trained in proper handling, storage, and emergency procedures, especially when handling pressurized gases.

Disclaimer:

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