# *Safety Data Sheet*

***According to Hazard Communication Standard (29 CFR 1910.1200)***

R32

**Issue date: 04/29/2015** **Version 1.0** **Revision date: 04/29/2015**

## 1. Identification

**Product name** R32

**Synonyms** -

**CAS #** See section 3

**Product code** -

**Product use** Used as refrigerant, an important component of R22's replacement.

**Manufacturer/Supplier**

**Supplier(Manufacturer):** Al Sweer Trading FZE

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## 2. Hazard(s) identification

**GHS classification**

| | | |
|---|---|---|
| **Physical hazards** | Flammable gases | Category 1 |
| | Gases under pressure | Liquefied gas |
| **Health hazards** | Not classified | |
| **Environmental hazards** | Not classified | |

**GHS label elements**

**Hazard Pictograms**

**Signal word** Danger

**Hazard statement** Extremely flammable gas.

Contains gas under pressure; may explode if heated.

**Precautionary statement**

**Prevention** Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

**Response** Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

Eliminate all ignition sources if safe to do so.

**Storage** Protect from sunlight. Store in a well-ventilated place.

**Disposal** Not applicable.

## 3. Composition / information on ingredients

| Components | CAS# | Percent |
|---|---|---|
| Difluoromethane | 75-10-5 | ⩾99.8% |

## 4. First-aid Measures

**First aid procedures**

| | |
|---|---|
| **Eye contact** | Immediately irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 10 minutes. Obtain immediate medical attention. |
| **Skin contact** | Thaw affected areas with water. Remove contaminated clothing. Caution: clothing may adhere to the skin in the case of freeze burns. After contact with skin, wash immediately with plenty of warm water. If irritation or blistering occurs, obtain medical attention. |
| **Inhalation** | Remove patient from exposure, keep warm and at rest. Administer oxygen if necessary. Apply artificial respiration if breathing has ceased or shows signs of failing. In the event of cardiac arrest apply external cardiac massage. Obtain immediate medical attention. |
| **Ingestion** | Unlikely route of exposure. Do not induce vomiting. Provided the patient is conscious, wash out mouth with water and give 200-300 ml (half a pint) of water to drink. Obtain immediate medical attention. |
| **Notes to physician** | Treat symptoms. |

## 5. Fire-fighting measures

| | |
|---|---|
| **Flammable properties** | Extremely flammable. |
| **Extinguishing media** | |
| **Suitable extinguishing media** | Use appropriate extinguishing media. Dry powder. |
| **Unsuitable extinguishing media** | Not available. |
| **Firefighting equipment/instructions** | Shut off gas supply if this can be done safely. If possible, take container out of dangerous zone. Cool cylinders with water spray. Self-contained breathing apparatus (SCBA) may be required if cylinders rupture or release under fire conditions. |
| **Hazardous combustion products** | Hydrogen fluoride, carbon dioxide, carbon monoxide. |

## 6. Accidental release measures

| | |
|---|---|
| **Personal precautions** | Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed. |
| **Environmental precautions** | Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. |
| **Methods for cleaning up** | Allow small spillages to evaporate provided there is adequate ventilation. Large spillages: Ventilate area. Contain spillages with sand, earth or any suitable adsorbent material. Prevent liquid from entering drains, sewers, basements and work pits since the vapor may create an explosive or suffocating atmosphere. |

## 7. Handling and storage

| | |
|---|---|
| **Handling** | Keep away from sources of ignition - No Smoking. Take precautionary measures against static discharges. Avoid inhalation of high concentrations of vapors. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Atmospheric concentrations well below the occupational exposure limit can be |

achieved by good occupational hygiene practice. The vapor is heavier than air, high concentrations may be produced at low levels where general ventilation is poor, in such cases provide adequate ventilation or wear suitable respiratory protective equipment with positive air supply. Avoid contact between the liquid and skin and eyes.

**Storage** Keep in a well ventilated place. Keep in a cool place away from fire risk, direct sunlight and all sources of heat such as electric and steam radiators. Avoid storing near to the intake of air conditioning units, boiler units and open drains. Cylinders and Drums: Keep container dry. Storage temperature: < 45°C.

## 8. Exposure controls / personal protection

**Control parameters:**

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA:**

Not Available

**EMERGENCY LIMITS:**

| Ingredient | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|
| Difluoromethane | 1,300 ppm | 1300 ppm | 39000 ppm |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| Difluoromethane | Not Available | Not Available |

**Exposure controls:**

**Appropriate engineering controls:** Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

**Individual protection measures, such as personal protective equipment:**

**Eye / face protection** Sufficient eye protection should be worn. When handling compressed gas, at least glasses with side protection should be worn. When handling liquid gas, chemical safety goggles must be used as well as a protective shield.

**Skin protection** Body protection: Use protective boots while handling gas cylinders.
Hand protection: Wear leather gloves to prevent frostbite injuries from rapidly expanding gas when handling pressurized gas bottles.

**Respiratory protection** In an emergency (e.g.: unintentional release of the substance, exceeding the occupational exposure limit value) respiratory protection must be worn. Consider the maximum period for wear. Wear self-contained breathing apparatus. Do not use filter respirator.

**General hygiene considerations** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing.

## 9. Physical and chemical properties

**Appearance**

**Physical state** Gas

**Form** Compressed liquefied gas

**Color** Clear, colorless

**Odor** Slight ethereal

| | |
|---|---|
| **Odor threshold** | Not available |
| **pH** | Not available |
| **Vapor pressure** | 17.01 Bar |
| **Melting point/Freezing point** | -136°C |
| **initial boiling point and boiling range** | -51.7°C |
| **Flash point** | Not available |
| **Evaporation rate** | Not available |
| **Flammability (solid, gas)** | Extremely flammable |
| **Explosion limits** | Not available |
| **Vapor density** | Not available |
| **Relative density** | Not available |
| **Solubility (water)** | Insoluble |
| **Partition coefficient** | 0.21 (25 °C) |
| **Auto-ignition temperature** | 530 °C |
| **Decomposition temperature** | Not available |
| **Specific gravity** | Not available |
| **Density** | Not available |
| **Flammability limits in air, upper, %by volume** | 31.0 %(v/v) |
| **Flammability limits in air, lower, % by volume** | 14.0 %(v/v) |
| **VOC** | Not available |
| **Percent volatile** | Not available |
| **Other data** | |
| **Viscosity** | Not available |

## 10. Stability and reactivity

| | |
|---|---|
| **Chemical stability** | Material is stable under normal conditions. |
| **Conditions to avoid** | Incompatible materials. Avoid contact with flames and red hot metallic surfaces. Temperatures above 45 °C. |
| **Incompatible materials** | Strong oxidizing agents, Alkali metals, Alkaline earth metals. |
| **Hazardous decomposition products** | Hazardous decomposition products formed under fire conditions: Carbon oxides, hydrogen fluoride. |
| **Possibility of hazardous reactions** | Can react violently if in contact with alkali metals and alkaline earth metals - sodium, potassium, barium. May react violently with: oxidizing agents. |

## 11. Toxicological information

### Toxicokinetics, metabolism and distribution:

**Non-human toxicological data:** Not available

### Information on toxicological effects:

**Acute toxicity:**

| | |
|---|---|
| **LD50(Oral, Rat):** | Not available |
| **LD50(Dermal, Rabbit):** | Not available |
| **LC50(Inhalation, Rat):** | > 520000 ppm 4H |
| **Skin corrosion/Irritation:** | Not classified. |
| **Serious eye damage/irritation:** | Not classified |

**Respiratory or skin sensitization:** Not classified

**Germ cell mutagenicity:** Not classified

**Carcinogenicity:** Not classified

**Reproductive toxicity:** Not classified

**STOT- single exposure:** Not classified

**STOT-repeated exposure:** Not classified

**Aspiration hazard:** Not classified

## 12. Ecological information

**Toxicity:**

| Acute toxicity | | Time | Species | Method | Evaluation | Remarks |
|---|---|---|---|---|---|---|
| LC50 | N/A | 96h | Fish | OECD 203 | N/A | N/A |
| EC50 | N/A | 48h | Daphnia | OECD 202 | N/A | N/A |
| EC50 | N/A | 72h | Algae | OECD 201 | N/A | N/A |

**Persistence and degradability:** Not readily biodegradable.

**Bioaccumulative potential:** The low octanol-water partition coefficient indicated that the product is not likely to bioaccumulate.

**Mobility in soil:** The product is insoluble in water.

**Results of PBT&vPvB assessment:** The substance is not PBT / vPvB.

**Other adverse effects:** No known significant effects or critical hazards.

## 13. Disposal considerations

**Disposal instructions** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

**DOT**

**Basic shipping requirements:**

**UN number** UN3252

**Proper shipping name** DIFLUOROMETHANE (REFRIGERANT GAS R 32)

**Hazard class** 2.1

**Packing group** -

**Environmental hazards** No

**IATA**

**UN number** UN3252

**UN proper shipping name** DIFLUOROMETHANE (REFRIGERANT GAS R 32)

**Transport hazard class(es)** 2.1

**Packing group** -

**Environmental hazards** No

**IMDG**

**UN number** UN3252

**UN proper shipping name** DIFLUOROMETHANE (REFRIGERANT GAS R 32)

| | |
|---|---|
| **Transport hazard class(es)** | 2.1 |
| **Packing group** | - |
| **Environmental hazards** | No |

## 15. Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture:**

| | |
|---|---|
| **Difluoromethane (75-10-5) is found on the following regulatory lists** | "US - Hawaii Air Contaminant Limits" List.<br>"US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory" List. |

## 16. Other information, including date of preparation or last revision

| | |
|---|---|
| **HMIS®ratings** | Health: 2<br>Flammability: 4<br>Physical hazard: 3 |
| **NFPA ratings** | Health: 2<br>Flammability: 4<br>Instability: 3 |
| **Disclaimer** | The information in the sheet was written based on the best knowledge and experience currently available. |
| **Issue date** | 04-29-2015 |