SAFETY DATA SHEET

R-32

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SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : R-32
OTHER NAME : Difluoromethane
PRODUCT USE : Refrigerant gas, for professional use only
Restrictions : Do not use product for anything outside of the above specified uses

SUPPLIER : RGAS, LLC
2777 Allen Pkwy, Suite 1185
Houston, Texas 77019

FOR MORE INFORMATION CALL:
(Monday – Friday, 8:00am– 5:00pm)
281-953-5550

IN CASE OF EMERGENCY CALL:
CHEMTREC: 1-800-424-9300

SECTION 2 - HAZARDS IDENTIFICATION SUMMARY

(As defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200)

CLASSIFICATION : Flammable gases, Category 1, H220
Gases under pressure, Liquefied Gas, H280
SIGNAL WORD : Warning

SYMBOL/PICTOGRAM : Gas cylinder 

Hazard statements:

H220 : Extremely flammable gas.
H280 : Contains gas under pressure; may explode if heated.

Supplemental Hazard Statements:

Overheating or overpressurizing may cause gas release or violent cylinder bursting.
May decompose on contact with flames or extremely hot metal surfaces to produce toxic and corrosive products.
May cause frostbite.
May displace oxygen and cause rapid suffocation.
May cause headache, nausea, dizziness, drowsiness, loss of consciousness.

HAZARD PREVENTION : Protect from sunlight. Store in a well-ventilated area.

Precautionary statements:

Prevention:

P210 : Keep away from heat, sparks, open flames, hot surfaces. No smoking.

Response:

P377 : Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 : Eliminate all ignition sources if safe to do so.

Storage:

P403 : Store in a well-ventilated place.
P410 : Protect from sunlight.

OTHER HAZARDS

Misuse or intentional inhalation may lead to death without warning. Vapors are heavier than air and can cause asphyxiation in confined spaces by reducing oxygen available for breathing. liquid refrigerant exposure to eyes or skin may cause frostbite due to rapid evaporation of the liquid. Wear protective gloves / eye protection / face protection.

SECTION 3 - COMPOSITION, INFORMATION OF INGREDIENTS

COMPONENT	CAS NUMBER	CONCENTRATION
Difluoromethane (HFC-32)	75-10-5	>=99.9%

SECTION 4 - FIRST AID MEASURES

GENERAL ADVICE : In the case of an accident or if you feel unwell, seek medical advice immediately. If symptoms persist or in all cases of doubt seek medical advice.

INHALATION : Immediately remove to fresh air. If breathing has stopped, give artificial respiration. Use oxygen as required, provided a qualified operator is available. Get medical attention.

SKIN CONTACT : Rapid evaporation of the liquid may cause frostbite. In case of contact with liquid, promptly flush skin with water until all chemical is removed. If there is evidence of frostbite, bathe (do not rub) with lukewarm water. Get medical attention if symptoms persist.

EYE CONTACT : Immediately flush eyes with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.

INGESTION : Ingestion is unlikely because of the physical properties and is not expected to be hazardous. As this product is a gas, refer to the inhalation section.

NOTES TO PHYSICIAN : Do not give adrenaline or similar drugs.

SECTION 5 - FIRE FIGHTING MEASURES

Extinguishing media (suitable):

: Dry chemical, Water spray, Carbon dioxide (CO2)

Protective equipment:

Fire fighters and others who may be exposed to products of combustion should wear full firefighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

Further firefighting advice:

Stop the flow of gas if possible.
Fight fire with large amounts of water from a safe distance.
Water mist should be used to reduce vapor concentrations in air.
Cool closed containers exposed to fire with water spray.
Closed containers of this material may explode when subjected to heat from surrounding fire.
After a fire, wait until the material has cooled to room temperature before initiating clean-up activities.
Firefighting equipment should be thoroughly decontaminated after use.

Fire and explosion hazards:

May decompose on contact with flames or extremely hot metal surfaces to produce toxic and corrosive products.
Liquid and gas under pressure, overheating or overpressurizing may cause gas release and/or violent cylinder bursting.
Container may explode if heated due to resulting pressure rise.
Some mixtures of HCFCs and/or HFCs, and air or oxygen may be combustible if pressurized and exposed to extreme heat or flame.
When burned, the following hazardous products of combustion can occur:

- Hydrofluoric acid
- Carbon oxides
- Carbonyl halides

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Prevent further leakage or spillage if able to do so without risk.
Evacuate personnel to safe areas.
Eliminate all ignition sources.
Use Halogen leak detector or other suitable means to locate leaks or check atmosphere.
Keep people away from and upwind of the spill or leak.
Wear personal protective equipment. Keep unprotected people away.
Ventilate the area. Vapors are heavier than air and can cause suffocation by reducing oxygen available for breathing.
Avoid accumulation of vapors in low areas.
Unprotected personnel should not return until air has been tested and determined safe.

ENVIRONMENTAL PRECAUTIONS : Prevent further leakage or spillage if safe to do so.

SPILL CLEANUP : Evaporates. Ventilate the area.

SECTION 7 - HANDLING AND STORAGE

HANDLING : Handle with care.
Always wear recommended personal protection equipment.
Avoid inhalation of vapor or mist.
Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 125°F.
Do not puncture or drop cylinders.
Do not expose the cylinders to open flame or excessive heat.
Do not remove valve cap until immediately ready for use.
Always replace cap after use.
Follow all standard safety precautions for handling and use of compressed gas cylinders.
Use only with adequate ventilation.
Residual gases may explode on ignition.
Do not cut, drill, grind, or weld on or near this container.
Follow label warnings even after container is emptied. Emptied container retains vapor and product residue.
Container is hazardous even when emptied.

STORAGE : Pressurized cylinder: Keep cylinders tightly closed in a cool, well-ventilated area, away from sources of ignition such as flame, sparks and static electricity and out of direct sunlight.
Ensure all storage and handling equipment is properly grounded and installed to satisfy electrical classification requirements. Static electricity may accumulate when transferring material. All metal and groundable storage containers, including but not limited to drums, cylinders, Returnable Intermodal Bulk Containers (RIBCs) and Class C Flexible Intermodal Bulk Containers (FIBCs) must be bonded and grounded during filling and emptying operations. Observe all federal, state and local regulations and National Fire Protection Association (NFPA) Codes which pertain to the specific local conditions of storage and use, including OSHA 29 CFR 1910.106 and NFPA 30, 70, 77, and 497.
Do not expose to temperatures exceeding 125°F or apply direct flame to cylinder.
Do not store above 113°F.
Do not drop or refill this cylinder.
Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured and ready for use.
Protect cylinder and its fittings from physical damage.
Storage in subsurface location should be avoided.

Do not store with the following product types:
Self-reactive substances and mixtures.
Finely divided metals (aluminum, magnesium, etc.).
Alkaline earth metals.
Alkali metals.
Strong bases.
Strong oxidizing agents.

The product has an indefinite shelf life when stored properly.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

ENGINEERING CONTROLS : Use sufficient ventilation to keep employee's exposure below recommended limits.
Local exhaust should be used when large amounts are released.
Provide local ventilation in areas where leakage is probable.

PROTECTIVE MEASURES : Do not breathe vapors.
Do not get in eyes, skin or on clothing.
Ensure safety showers and eyewash stations are close to the workstation location.
Self-contained breathing apparatus (SCBA) is required if a large release occurs.

PERSONAL PROTECTIVE EQUIPMENT

EYE PROTECTION : For normal conditions, wear safety glasses with side-shields.
Where there is reasonable probability of liquid contact, wear chemical safety goggles or face shield, giving complete protection to eyes.

SKIN AND BODY PROTECTION : Avoid skin contact with leaking liquid refrigerant. Skin contact with refrigerant may cause frostbite.
General work clothing and leather gloves should provide adequate protection. If prolonged contact with the liquid or gas is anticipated, wear impervious cold insulating gloves and face shield.

RESPIRATORY PROTECTION : Under normal manufacturing conditions, no respiratory protection is required when using this product.

EXPOSURE GUIDELINES

Components	CAS Number	ACGIH TLV	OSHA PEL	Other Limit
Difluoromethane	75-10-5	None	None	** 1,000 ppm TWA (8hr)

Remarks: Listed

** (AIHA) Workplace Environmental Exposure Level

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE : Liquefied Gas

COLOR : Colorless

ODOR : Weak, ether-like

ODOR THRESHOLD : No applicable data available

pH	: Not applicable.
MELTING POINT	: -213°F
BOILING POINT	: -60.9°F
VAPOR PRESSURE	: 11,429 mmHg (70°F)
VAPOR DENSITY	: 2.1 kg/m3 (77°F)(Method: calculated) 760 mmHg
DENSITY	: 961 kg/m3 (77 °F (25 °C)) (12.675 mmHg))liquid
FLASH POINT	: Not applicable.
SOLUBILITY IN WATER	: 1.68 g/l 77 °F (25 °C)
SOLUBILITY IN OTHER:	: Alcohol
EVAPORATION RATE	: No data available
FLAMMABILITY	: See GHS Classification in Section 2 if applicable
LOWER EXPLOSION LIMIT	: None
UPPER EXPLOSION LIMIT	: None
AUTO IGNITION TEMPERATURE	: 986 °F (530 °C) (Method: Standard A15 (D. 92/69/EEC))
LOWER FLAMMABLE LIMIT:	14.4 %(V)
UPPER FLAMMABLE LIMIT :	31.0 %(V)
PARTITION COEFFICIENT	: log Pow: = 0.2177 °F (25 °C) (Method: OECD Test Guideline 107)
VISCOSITY	: Not applicable
CRITICAL POINT	: Critical pressure: 43725.00 mmHg Critical temperature: 173.1 °F (78.4 °C)
MOLECULAR WEIGHT	: 52.02 g/mol
% VOLATILES	: 100%

SECTION 10 - STABILITY AND REACTIVITY

REACTIVITY : Stable under normal ambient temperature and pressure.

CHEMICAL STABILITY	:	Stable under normal conditions
POSSIBILITY OF HAZARDOUS REACTIONS	:	None known.
CONDITIONS TO AVOID	:	Avoid open flames and high temperatures. Product decomposes under high temperatures Can form a combustible mixture with air at pressures above atmospheric pressure. Do Not mix with oxygen or air above atmospheric pressures.
INCOMPATIBLE MATERIALS TO AVOID	:	Strong oxidizing agents, Alkaline earth metals, finely divided metals (aluminum, magnesium, etc.), Alkali metals, strong bases.
HAZARDOUS DECOMPOSITION PRODUCTS	:	This product can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid (HF) and possibly carbonyl fluoride, carbon oxides, carbonyl halides.

SECTION 11 - TOXICOLOGICAL INFORMATION

INHULATION EFFECTS (ACUTE)	:	(Difluoromethane)	LC50: 4 hr. (rat), ≥ 520,000 ppm Cardiac Sensitization threshold (dog),≥350,000 ppm
DELAYED EFFECTS (SUB-CHRONIC AND CHRONIC)	:	Teratology - Negative Sub-chronic inhalation (Rat) no adverse effects reported.	

SECTION 12 - ECOLOGICAL INFORMATION

DEGRADABILITY (BOD)	:	Not readily biodegradeable. (28 d)biodegradation 5%
OCTANOL WATER PARTITION COEFFICIENT	:	log Pow: = 0.21, at 77 °F (25 °C)
GLOBAL WARMING POTENTIAL	:	GWP 675 (Global warming potential with respect to CO2 (time horizon 100 years))

SECTION 13 - DISPOSAL CONSIDERATIONS

DISPOSAL METHODS	:	Observe all Federal, State and Local Environmental regulations.
NOTE	:	This product is subject to U.S. Environmental protection Agency Clean Air Act Regulations Section 608 in 40 CFR part 82 regarding refrigerant recycling.

SECTION 14 - TRANSPORT INFORMATION

DOT	UN Number	: 3252
	Proper Shipping Name	: Difluoromethane
	Class	: 2.1
IMDG	UN Number	: 3252
	Description of the goods	: DIFLUOROMETHANE
	Class	: 2.1
	Marine pollutant	: no

SECTION 15 - REGULATORY INFORMATION

SARA Title III – Section 302 Extremely Hazardous Chemicals:
:The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:
: Acute Health Hazard, Sudden Release of Pressure Hazard, Fire Hazard

SARA 313 Regulated Chemicals
: This material does not contain any chemical components with known CAS numbers that that exceed the threshold (De Minims) reporting levels stablished by SARA Title III, Section 313.

SECTION 16 - OTHER INFORMATION

OTHER INFORMATION:
: EUH044: Risk of explosion if heated under confinement.
H220: Extremely flammable gas.
H280: Contains gas under pressure; may explode if heated.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not the be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.