SAFETY DATA SHEET

R-407A

Version 2.0
Revision Date 4/12/2023
Document 10005006

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : R-407A
OTHER NAME : Difluoromethane, Pentafluoroethane, 1,1,1,2-Tetrafluoroethane
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 : Gases under pressure, Liquefied Gas
SIGNAL WORD : Warning
HAZARD STATEMENT : Contains gas under pressure, may explode if heated. May Displace oxygen and cause rapid suffocation.

SYMBOL/PICTOGRAM : Gas cylinder 

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

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	20%
Pentafluoroethane (HFC-125)	354-33-6	40%
1,1,1,2-Tetrafluoroethane (HFC-134a)	811-97-2	40%

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. Do not give epinephrine (Adrenaline).

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 : Because of the possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution and only in situations of emergency life support.

SECTION 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : This product is non-flammable – ASTM D 56-82, ASTM E-681
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

UNSUITABLE EXTINGUISHING MEDIA : No applicable data available

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE : This product is not flammable at ambient temperatures and atmospheric pressure. However, this material can ignite when mixed with air under pressure and exposed to strong ignition sources.
Cylinders are equipped with pressure and temperature relief devices but may still rupture under fire conditions.
Cool closed containers exposed to fire with water spray
Do not allow run-off from firefighting to enter drains or water courses.
Vapors are heavier than air and can cause suffocation by reducing oxygen available for

breathing.

Fire may cause evolution of:
Halogenated compounds
Hydrogen fluoride
Carbon oxides
Carbonyl halides

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Evacuate personnel to safe areas.
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.

STORAGE : Pressurized cylinder: Keep cylinders tightly closed in a cool, well-ventilated area of low fire risk and out of direct sunlight.
Do not expose to temperatures exceeding 125°F
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
Organic peroxides
Oxidizing agents
Pyrophoric liquids/solids

Self-heating substances and mixtures
Acutely toxic substances and mixtures

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)
Pentafluoroethane	354-33-6	None	None	** 1,000 ppm TWA (8hr)
1,1,1,2-Tetrafluoroethane	811-97-2	None	None	** 1,000 ppm TWA (8hr)

** (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	: Neutral
MELTING POINT	: No data available
BOILING POINT	: -43°C
VAPOR PRESSURE	: 167.52 psia at 75°F 356.7 psia at 130°F
VAPOR DENSITY	: 0.0423 g/cm3 at 75°F
DENSITY	: 1.1423 g/cm3 at 75°F
FLASH POINT	: Not applicable
SOLUBILITY IN WATER	: No data available
EVAPORATION RATE	: >1 (CCL4=1.0)
FLAMMABILITY	: Not applicable
LOWER EXPLOSION LIMIT	: None
UPPER EXPLOSION LIMIT	: None
AUTO IGNITION TEMPERATURE	: No applicable data available
DECOMPOSITION TEMPERATURE	: >250°C
PARTITION COEFFICIENT n-octanol/water	: No applicable data available
VISCOSITY	: Not applicable

SECTION 10 - STABILITY AND REACTIVITY

REACTIVITY	: Stable under normal ambient temperature and pressure.
CHEMICAL STABILITY	: Stable under normal conditions
POSSIBILITY OF HAZARDOUS REACTIONS	: Hazardous polymerization does not occur.
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	: Powdered metals Aluminum Magnesium Zinc Potassium Calcium
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.

SECTION 11 - TOXICOLOGICAL INFORMATION

INHULATION EFFECTS	:	(Difluoromethane)	LC50: 4 hr. (rat), ≥ 520,000 ppm Cardiac Sensitization threshold (dog),≥350,000 ppm
(ACUTE)		(Pentafluoroethane)	LC50: 4 hr. (Rat) > 800,000 PPM Cardiac Sensitization threshold (dog),≥100,000 ppm
		(1,1,1,2-Tetrafluoroethane)	LC50: 4 hr. (Rat) > 567,000 Cardiac Sensitization threshold (dog),≥100,000 ppm

DELAYED EFFECTS (SUB-CHRONIC AND CHRONIC)	: Teratology - Negative Sub-chronic inhalation (Rat) NOEL – 50,000 ppm
OTHER DATA	: Not active in four genetic studies

SECTION 12 - ECOLOGICAL INFORMATION

DEGRADABILITY (BOD)	: R407A is a gas at room temperature; therefore, it is unlikely to remain in water.
OCTANOL WATER PARTITION COEFFICIENT	: Unknown for Mixture

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	: 3338
	Proper Shipping Name	: Refrigerant Gas R 407A
	Class	: 2.2
	Packing Group	:
	Hazard Label	: 2.2
IATA	UN Number	: 3338
	Description of the goods	: Refrigerant Gas R 407A
	Class	: 2.2
	Hazard Label	: 2.2
	Packing Instructions (Cargo Aircraft)	: 200
	Packing Instructions (Passenger Aircraft)	: 200
IMDG	UN Number	: 3338
	Description of the goods	: Refrigerant Gas R 407A
	Class	: 2.2
	Hazard Labels	: 2.2
	EmS Number	: F-C, S-V
	Marine pollutant	: no

SECTION 15 - REGULATORY INFORMATION

TSCA : On the inventory, or in compliance with the inventory

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

PA Right to Know Regulated Chemicals : Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Difluoromethane

NJ Right to Know Regulated Chemicals : Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Difluoromethane

California Prop. 65 : Chemicals known to the State of California to cause cancer, birth defects or any other harm: None known

SECTION 16 - OTHER INFORMATION

		HMIS III	NFPA
HEALTH HAZARD	:	1	2
FLAMMABILITY	:	1	1
PHYSICAL HAZARD	:	0	
INSTABILITY	:		0

ANSI/ASHRAE 34 SAFETY GROUP : A1

REGULATORY STANDARDS : OSHA regulations for compressed gases: 29 CFR 1910.101
DOT Classification, 49 CFR 172.101

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 no be valid for such material used in combination with any other materials or in any process, unless specified in the text.