



Safety Data Sheet Information

Section 1. CHEMICAL PRODUCT SECTION

Product Name: R-404a Refrigerant
Date Prepared: 05-2015

Manufacturer: Weitron, Inc.
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Section 2. HAZARDS IDENTIFICATION

PRODUCT HAZARD CATEGORY: Gases under pressure. Liquefied Gas
LABEL CONTENT: **Pictogram**



SIGNAL WORD: WARNING

HAZARDOUS WARNINGS: Contains gas under pressure; may explode if heated.

HAZARDOUS PREVENTION MEASURES: Protect from sunlight. Store in a well-ventilated place.

OTHER HAZARDS: Misuse or intentional inhalation abuse may lead to death without warning. Vapor is heavier than air and can cause suffocation by reducing oxygen available for breathing. Rapid evaporation of the liquid may cause frostbite.

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	CHEMICAL FAMILY Description	Weight %
420-46-2	1,1,1-Trifluoroethane (HFC-143a)	52%
354-33-6	Pentafluoroethane (HFC-125)	44%
811-97-2	1,1,1,2-Tetrafluoroethane (HFC-134a)	4%

This product contains no known hazardous materials as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Emergency Overview:

Contents under pressure. "Frostbite-like" effects may occur if the liquid or escaping vapors contact the eyes or skin. Inhalation overexposure may cause: Central nervous system depression with dizziness, confusion, loss of coordination, drowsiness, unconsciousness or death. Suffocation if air is displaced by vapors.

Potential Health Effects:

Eyes: Frostbite-like" effects may occur if the liquid or escaping vapors contact the eyes.

Skin: Frostbite-like" effects may occur if the liquid or escaping vapors contact the skin.

Inhalation: Inhalation overexposure may cause: Central nervous system depression with dizziness, confusion, loss of coordination, drowsiness, unconsciousness or death. Suffocation, if air is displaced by vapors.

Ingestion: Is not considered a potential route of exposure

Carcinogenicity: No known cancer hazards.

HMIS Classification:

Health	1
Flammability	0
Reactivity	1

Section 4.

FIRST AID MEASURES

Eye Contact:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately. Skin

Contact:

Wash affected area immediately with large amounts of soap or water for 15 minutes. Remove contaminated clothing and shoes, and wash before reusing. Treat affected area for frostbite if necessary by gently warming. May irritate skin. If irritation continues contact Physician.

Inhalation:

If inhaled, immediately remove to area with fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen. Contact Physician..

Ingestion:

Is not considered a potential route of exposure.

Advice to Physician

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

Section 5.

FIRE FIGHTING MEASURES

Flash Point:

Does not flash

Flammable limits in Air

LEL:	None
UEL:	None

Based on ASHRAE Standard 34 with match ignition

Extinguishing Media:

Water, carbon dioxide, foam or dry powder.

Fire & Explosion Hazards:

Not flammable at ambient temperatures and atmospheric pressure. Material will become combustible when mixed with air under pressure and exposed to ignition sources. Hazardous thermal decomposition products (Carbon oxides, Hydrogen Fluoride, Carbonyl fluoride)

Fire Fighting Instructions:

Contents under pressure and container may rupture when exposed to high temperature. Product may act as asphyxiate. As in any fire, wear self-contained breathing apparatus pressure- demand MSHA/NIOSH (approved or equivalent) and full protective gear. Contain runoff water. Contaminated extinguishing water must be disposed of in accordance with applicable regulations. Avoid breathing smoke, fumes, and decomposition products.

Section 6.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

Evacuate personnel to safe areas. Ventilate area. Wear appropriate personal protective equipment

Initial Containment

Contain spilled material. Do not allow material to enter soil or surface water. Product evaporates

Spill Procedures

Contain spilled material. Large spillage should be dammed-off and pumped into containers.

Section 7.

HANDLING AND STORAGE

Handling (Personnel)

Do not breathe vapors. Do not get in eyes, on skin or clothing. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Use appropriate personal protective equipment when using material. Do not puncture or drop cans. Do not expose cans to high heat or open flame.

Handling (Physical Aspects)

Avoid contact with strong oxidizing agents. Avoid contact with eyes and skin. Keep away from children.

Storage Precautions

Protect containers from physical damage. Do not Puncture, incinerate or store cans above 120°F. Keep in cool dry area out of direct sunlight.

Section 8.

EXPOSURE CONTROL/PERSONAL PROTECTION

Engineering Controls:

Good general ventilation should be sufficient under normal use conditions.

Eye/Face Protective Requirements:

Wear safety glasses, splash goggles or face shield. Where contact with this material is likely, eye protection is recommended.

Skin Protection:

Wear protective gloves to minimize skin contamination. When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material.

Respiratory Protection:

Under normal use conditions, with adequate ventilation, no special handling equipment is required.

Miscellaneous

Use good personal hygiene practices; limit exposure to product whenever possible to minimize clean-up.

Exposure Guidelines

Exposure Limit Values

1,1,1-Trifluoroethane		
AEL	1,000 ppm	8 & 12 hr. TWA
Pentafluoroethane		
AEL	1,000 ppm	8 & 12 hr. TWA
1,1,1,2-Tetrafluoroethane		
AEL	1,000 ppm	8 & 12 hr. TWA

AEL is the Acceptable Exposure Limit as determined by DuPont

Section 9.

PHYSICAL AND CHEMICAL PROPERTIES

Form:	Liquefied Gas
Color:	Colorless
Odor:	Slight ethereal odor
Boiling Point:	-46.2°C (-51.2°F)
Solubility in Water:	not determined
Vapor Pressure:	150 psig @ 70°F
Vapor Gravity:	Not Determined
Specific Gravity:	1.05 @ 25°C (77°F)
Liquid Density:	1.167 g/cm ³ @25°C (77°F)
PH:	<7
Volatile Organic Compounds (VOC)	Not Determined

Flash point & additional flammability data found in section 5.

Section 10.

STABILITY AND REACTIVITY

Stability

This compound is stable at ambient conditions.

Polymerization

Hazardous polymerization will not occur

Conditions to avoid

Do not mix with air above atmospheric pressure or oxygen. Do not puncture, incinerate or store cans above 120°F. Keep in cool dry area out of direct sunlight.

Incompatibility with other materials

Avoid contact with strong oxidizing agents. Incompatible with alkali or alkaline earth metals – powdered aluminum, Zinc, etc.

Decomposition

Avoid high temperatures or open flames which can decompose material forming hydrofluoric acid, and possibly carbonyl halides.

Section 11.

TOXICOLOGY INFORMATION

1,1,1-Trifluoroethane (HFC-143a)

Dermal	: not applicable
Oral	: not applicable
Inhalation 4 h LC50	: >540000ppm, rat Anesthetic effects
Inhalation 4 h LC50	: 591000ppm, rat
Inhalation (LOAEC)	: 300000ppm dog Cardiac sensitization
Skin Irritation	: No irritation, not tested on animals Not expected to cause skin irritation based on expert review of properties of the substance
Eye Irritation	: No irritation, not tested on animals Not expected to cause skin irritation based on expert review of properties of the substance
Skin Sensitization	: Not tested on animals Not expected to cause sensitization based on expert review of the properties of the substance
Repeated dose toxicity	: Inhalation Rat No toxicologically significant effects were found
Carcinogenicity	: Animal testing did not show any carcinogenic effects
Mutagenicity	: Did not cause genetic damage in animals Did not cause genetic damage in cultured mammalian cells Did not cause genetic damage in cultured bacterial cells
Teratogenicity	: Animal testing showed effects on embryo-fetal development at level equal to or above those cause maternal toxicity
Further information	: Cardiac sensitization threshold limit: 1040000 mg/m ³

Pentafluoroethane (HFC-125)

Dermal	: not applicable
Oral	: not applicable
Inhalation 4 h LC50	: >800000ppm, rat
Inhalation (LOAEC)	: 100000ppm dog Cardiac sensitization
Skin Irritation	: No irritation, not tested on animals Not expected to cause skin irritation based on expert review of properties of the substance
Eye Irritation	: No irritation, not tested on animals Not expected to cause skin irritation based on expert review of properties of the substance
Skin Sensitization	: Not tested on animals Not expected to cause sensitization based on expert review of the properties of the substance
Repeated dose toxicity	: Inhalation Rat No toxicologically significant effects were found
Carcinogenicity	: Overall weight of evidence indicates that the substance is not carcinogenic
Mutagenicity	: Did not cause genetic damage in animals Did not cause genetic damage in cultured mammalian cells Did not cause genetic damage in cultured bacterial cells
Reproductive toxicity	: Evidence suggests the substance is not a reproductive toxin in animals. Information given is based on data obtained from similar substances
Teratogenicity	: Animal testing showed no developmental toxicity
Further information	: Cardiac sensitization threshold limit: 490000 mg/m ³

1,1,1,2-Tetrafluoroethane (HFC-134a)

Dermal	: not applicable
Oral	: not applicable
Inhalation 4 h LC50	: 567000ppm, rat
Inhalation (LOAEC)	: 75000ppm dog Cardiac sensitization
Skin Irritation	: Slight irritation, rabbit Not expected to cause skin irritation based on expert review of properties of the substance No skin irritation, human
Eye Irritation	: Slight irritation, rabbit Not expected to cause skin irritation based on expert review of properties of the substance No eye irritation, human
Skin Sensitization	: Did not cause sensitization on laboratory animals, guinea pig Not expected to cause sensitization based on expert review of the properties of the substance
Repeated dose toxicity	: Inhalation Rat No toxicologically significant effects were found

Carcinogenicity	: Overall weight of evidence indicates that the substance is not carcinogenic An increased incidence of benign tumors was observed in laboratory animals
Mutagenicity	: Did not cause genetic damage in animals Did not cause genetic damage in cultured mammalian cells Did not cause genetic damage in cultured bacterial cells
Reproductive toxicity	: Animal testing showed no reproductive toxicity
Teratogenicity	: Animal testing showed effects on embryo-fetal development at levels equal to or above those cause maternal toxicity
Further information	: Cardiac sensitization threshold limit: 312975 mg/m ³

Section 12.

ECOLOGICAL INFORMATION

Aqua Toxicity

1,1,1-Trifluoroethane (HFC-143a)

96 h LC50	: Oncorhynchus mykiss (rainbow trout) >100mg/L
72 h EC50	: Not applicable
48 h EC50	: Daphnia 300mg/L

Pentafluoroethane (HFC-125)

96 h LC50	: Danio rerio (zebra fish) >200mg/L Information given is based on data obtained from similar substances
96 h LC50	: Oncohynchus mykiss (rainbow trout) 450mg/L Information given is based on data obtained from similar substances
96 h EC50	: Algae 142 mg/L Information given is based on data obtained from similar substances
48 h EC50	: Daphnia magna (water flea) >200 mg/L Information given is based on data obtained from similar substances

1,1,1,2-Tetrafluoroethane (HFC-134a)

96 h LC50	: Oncorhynchus mykiss (rainbow trout) 450 mg/L
72 h EC50	: Algae >118 mg/L Information given is based on data obtained from similar substances
48 h EC50	: Daphnia magna (water flea) 980 mg/L

Environmental Fate

1,1,1-Trifluoroethane (HFC-143a)

Biodegradability	: Not readily biodegradable
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Section 13.

DISPOSAL CONSIDERATIONS

Waste Disposal

Can be used after re-conditioning. Recover by distillation or remove to a permitted waste disposal facility. Comply with Federal, State, and local regulations

Environmental Hazards

Empty Pressure Vessels should be returned to the supplier

Section 14.**TRANSPORTATION INFORMATION**

US DOT Information:

Shipping Name : Refrigerant Gas R-404a
Product Label : Refrigerant Gas R-404a
Shipping Class : 2.2
UN/NA # : 3337

ICAO/IATA

Shipping Name : Refrigerant Gas R-404a
Shipping Class : 2.2
UN/NA# : UN3337
Exceptions : Can qualify for limited quantity under special provisions
Other information : Non-flammable

IMDG

Shipping Name : Refrigerant Gas R-404a
Shipping Class : 2.2
UN/NA# : UN3337
Exceptions : Can qualify for limited quantity under special provisions
Other information : Non-flammable

Other Transportation Information:

The Transport information may vary with the container and mode of shipment.

Section 15.**REGULATORY INFORMATION****Miscellaneous Information**

This material or all of its components are listed on the Inventory of Existing Chemical Substances under the Toxic Substance Control Act (TSCA)

This material or all of its components are listed (or considered as having been notified) on the European Inventory of Existing Chemical Substances (EINECS)

This material or all of its components are listed on the Canadian Domestic Substances List (DSL)

Section 16.**OTHER INFORMATION**

To the best of our knowledge, the information contained herein is accurate. **However, neither Weitron Inc. nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.** Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.