

SECTION 1: IDENTIFICATION
1.1. Product Identifier
Product Form: Mixture

Product Name: CHOICE R-421A

1.2. Intended Use of the Product Refrigerant

1.3. Name, Address, and Telephone of the Responsible Party
Manufacturer

Choice Refrigerants

610 McFarland 400 Dr.

Alpharetta, GA 30004

800-347-5872

www.choicerefrigerants.com

Fax #: 770-777-0599

1.4. Emergency Telephone Number
Emergency Number : 800-424-9300 - Chemtrec (24 hours)

SECTION 2: HAZARDS IDENTIFICATION
2.1. Classification of the Substance or Mixture

Simple Asphy

Press. Gas (Liq.) H280

Full text of hazard classes and H-statements : see section 16

2.2. Label Elements
GHS-US Labeling
Hazard Pictograms (GHS-US) :


GHS04

Signal Word (GHS-US) :

Warning

Hazard Statements (GHS-US) :

 H280 - Contains gas under pressure; may explode if heated.
 May displace oxygen and cause rapid suffocation.

Precautionary Statements (GHS-US) :

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

2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions. Contact with gas escaping the container can cause frostbite.

2.4. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS
3.1. Substance

Not applicable

3.2. Mixture

Name	Synonyms	Product Identifier**	%	GHS US classification
Ethane, pentafluoro-	Ethane, 1,1,1,2,2-pentafluoro- / HFC-125 / 1,1,2,2,2-Pentafluoroethane / Pentafluoroethane / Refrigerant gas R125 / Freon 125 / 1,1,1,2,2-Pentafluoroethane / HFC 125	(CAS-No.) 354-33-6	57 - 59	Simple Asphy Press. Gas (Liq.), H280

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1,1,1,2-Tetrafluoroethane	Ethane, 1,1,1,2-tetrafluoro- / HFC 134a / Norflurane / HFC-134a / Tetrafluoroethane, 1,1,1,2- / Refrigerant gas R134a / Refrigerant gas R 134a / Freon 134a	(CAS-No.) 811-97-2	41 - 43	Press. Gas (Liq.), H280
Synthetic Alkylate(s)	Proprietary	(CAS-No.) Proprietary	1.125 - 1.5	Not classified
Lubricant Additive	Proprietary	(CAS-No.) Proprietary	0.0075 - 0.02	Not classified

Full text of H-phrases: see section 16

The specific chemical identity and/or exact percentage of composition have been withheld as a trade secret [29 CFR 1910.1200].

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid Measures After Inhalation: Obtain medical attention if breathing difficulty persists. First, take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate respiratory protective equipment, use the buddy system), then remove the exposed person to fresh air. Keep at rest in a position comfortable for breathing.

First-aid Measures After Skin Contact: Remove contaminated clothing. For brief contact with a small amount: Rewarm with body heat. Get immediate medical advice/attention. For extensive contact or a large amount: Immediately call a poison center/doctor and follow their advice. Specific treatment is urgent, incorrect first-aid practices will aggravate the injury. Protect affected area with a loose cover until proper medical treatment is received. Obtain medical attention if irritation develops or persists.

First-aid Measures After Eye Contact: Rinse cautiously with water for at least 5 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.

First-aid Measures After Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

Symptoms/Injuries: May cause frostbite on contact with the liquid. Asphyxia by lack of oxygen: risk of death.

Symptoms/Injuries After Inhalation: In elevated concentrations may cause asphyxiation, central nervous system effects, and increased breathing rate. Symptoms of asphyxiation include headache, dizziness, rapid breathing, increased pulse, mood changes, tremors, cyanosis, muscular weakness, narcosis, numbness of the extremities, unconsciousness and death. High concentrations may cause central nervous system depression such as dizziness, vomiting, numbness, drowsiness, headache, and similar narcotic symptoms.

Symptoms/Injuries After Skin Contact: Contact with gas/liquid escaping the container can cause frostbite and freeze burns.

Symptoms/Injuries After Eye Contact: Contact with gas/liquid escaping the container can cause frostbite, freeze burns, and permanent eye damage.

Symptoms/Injuries After Ingestion: Not considered a potential route of exposure, but contact with gas/liquid escaping the container can cause freeze burns and frostbite.

Chronic Symptoms: May cause CNS depression and cardiac arrhythmia, and other cardiac disorders from exposure.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Water spray, fog, carbon dioxide (CO₂), alcohol-resistant foam, or dry chemical.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Container may explode in heat of fire.

Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Toxic fumes may be released. Corrosive vapors.

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SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not get in eyes, on skin, or on clothing. Do not breathe gas, vapors, spray.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

Ventilate area. Evacuate unnecessary personnel, isolate, and ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Stop leak, if possible without risk. As an immediate precautionary measure, isolate spill or leak area in all directions.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Stop the source of the release, if safe to do so. Consider the use of water spray to disperse vapors. Isolate the area until gas has dispersed. Ventilate and gas test area before entering. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: At elevated temperatures, the product may decompose. When heated to decomposition, emits toxic fumes. Do not pressurize, cut, or weld containers. Ruptured cylinders may rocket. Asphyxiating gas at high concentrations.

Precautions for Safe Handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not breathe gas. Avoid prolonged contact with eyes, skin and clothing.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling.

Incompatible Materials: Strong acids, strong bases, strong oxidizers.

7.3. Specific End Use(s) No additional information available

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), or OSHA (PEL).

Ethane, pentafluoro- (354-33-6)		
USA AIHA	WEEL TWA (ppm)	1000 ppm
1,1,1,2-Tetrafluoroethane (811-97-2)		
USA AIHA	WEEL TWA (ppm)	1000 ppm

8.2. Exposure Controls

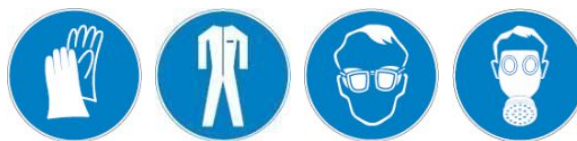
Appropriate Engineering Controls : Suitable eye/body wash equipment should be available in the vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Use explosion-proof equipment. Oxygen detectors should be used when asphyxiating gases may be released.

Personal Protective Equipment : Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection.

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Materials for Protective Clothing	: Chemically resistant materials and fabrics.
Hand Protection	: Wear protective gloves. If material is cold, wear thermally resistant protective gloves.
Eye and Face Protection	: Chemical safety goggles.
Skin and Body Protection	: Wear suitable protective clothing.
Respiratory Protection	: Use a NIOSH-approved self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.
Thermal Hazard Protection	: Wear thermally resistant protective clothing.
Other Information	: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Gas
Appearance	: Clear, colorless gas
Odor	: No data available
Odor Threshold	: No data available
pH	: No data available
Evaporation Rate	: No data available
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: -40.2 °C (-40.36 °F)
Flash Point	: No data available
Auto-ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor Pressure	: 7059 mm Hg (9411 hPa)
Relative Vapor Density at 20°C	: No data available
Relative Density	: No data available
Solubility	: Water: Nil
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: No data available
Explosive Properties	: Contains gas under pressure; may explode if heated.
9.2. Other Information	
Gas Group	: Press. Gas (Liq.)

SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:** Hazardous reactions will not occur under normal conditions.
- 10.2. Chemical Stability:** Contains gas under pressure; may explode if heated.
- 10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, open flames, sources of ignition and incompatible materials.
- 10.5. Incompatible Materials:** Strong acids, strong bases, strong oxidizers.
- 10.6. Hazardous Decomposition Products:** Thermal decomposition may produce : fluoride compounds. Hydrogen fluoride. Toxic gases may be formed. Corrosive vapors. Carbon oxides (CO, CO₂). Carbonyl fluoride.

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SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Acute Toxicity (Oral): Not classified

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

Ethane, pentafluoro- (354-33-6)	
LC50 Inhalation Rat	2910 g/m ³ (Exposure time: 4 h)
1,1,1,2-Tetrafluoroethane (811-97-2)	
LC50 Inhalation Rat	1500 g/m ³ (Exposure time: 4 h)

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

Specific Target Organ Toxicity (Single Exposure): Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: In elevated concentrations may cause asphyxiation, central nervous system effects, and increased breathing rate. Symptoms of asphyxiation include headache, dizziness, rapid breathing, increased pulse, mood changes, tremors, cyanosis, muscular weakness, narcosis, numbness of the extremities, unconsciousness and death. High concentrations may cause central nervous system depression such as dizziness, vomiting, numbness, drowsiness, headache, and similar narcotic symptoms.

Symptoms/Injuries After Skin Contact: Contact with gas/liquid escaping the container can cause frostbite and freeze burns.

Symptoms/Injuries After Eye Contact: Contact with gas/liquid escaping the container can cause frostbite, freeze burns, and permanent eye damage.

Symptoms/Injuries After Ingestion: Not considered a potential route of exposure, but contact with gas/liquid escaping the container can cause freeze burns and frostbite.

Chronic Symptoms: May cause CNS depression and cardiac arrhythmia, and other cardiac disorders from exposure.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General : Not classified.

Ethane, pentafluoro- (354-33-6)	
LC50 Fish 1	274 mg/l
EC50 Daphnia 1	283 mg/l
ErC50 (Algae)	172 mg/l
1,1,1,2-Tetrafluoroethane (811-97-2)	
LC50 Fish 1	450 mg/l
EC50 Daphnia 1	980 mg/l

12.2. Persistence and Degradability

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Persistence and Degradability	Not established.

12.3. Bioaccumulative Potential

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Bioaccumulative Potential	Not established.

12.4. Mobility in Soil No additional information available

12.5. Other Adverse Effects

Other Adverse Effects : Liquid may cause freeze damage to the environment.

Other Information : Avoid release to the environment.

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SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, and international regulations.

Additional Information: Container may remain hazardous when empty. Continue to observe all precautions. Empty gas cylinders should be returned to the vendor for recycling or refilling. Do not puncture or incinerate container.

Ecology - Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

Proper Shipping Name : REFRIGERANT GASES, N.O.S. (Contains: Ethane, pentafluoro- ; 1,1,1,2-Tetrafluoroethane)
Hazard Class : 2.2
Identification Number : UN1078
Label Codes : 2.2



ERG Number : 126

14.2. In Accordance with IMDG

Proper Shipping Name : REFRIGERANT GAS, N.O.S. (Contains: Ethane, pentafluoro- ; 1,1,1,2-Tetrafluoroethane)
Hazard Class : 2
Division : 2.2
Identification Number : UN1078
Label Codes : 2.2
EmS-No. (Fire) : F-C
EmS-No. (Spillage) : S-V



14.3. In Accordance with IATA

Proper Shipping Name : REFRIGERANT GAS, N.O.S. (Contains: Ethane, pentafluoro- ; 1,1,1,2-Tetrafluoroethane)
Identification Number : UN1078
Hazard Class : 2
Label Codes : 2.2
Division : 2.2
ERG Code (IATA) : 2L



SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

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SARA Section 311/312 Hazard Classes	Physical hazard - Gas under pressure Health hazard - Simple asphyxiant
Ethane, pentafluoro- (354-33-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	PMN - PMN - indicates a commenced PMN substance.
1,1,1,2-Tetrafluoroethane (811-97-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. US State Regulations Neither this product nor its chemical components appear on any US state lists, or its chemical components are not required to be disclosed

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 04/06/2020

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Other Information

: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200

GHS Full Text Phrases:

Press. Gas (Liq.)	Gases under pressure Liquefied gas
Simple Asphy	Simple Asphyxiant
H280	Contains gas under pressure; may explode if heated

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS US (GHS HazCom)