



ULTRA COOL PRODUCTS
889 BARTON ST. UNIT #1
STONEY CREEK, ON L8E 5V1

905-643-0060

PRODUCT: Ultra Cool 1234yf Replacement Refrigerant

CODE: UC-210

SECTION 01: IDENTIFICATION

Product Identifier..... Ultra Cool 1234yf Replacement Refrigerant
Other means of Identification..... UC-210
Chemical Family..... Petroleum gases, liquefied.
Recommended use and restrictions..... Refrigerant.
Initial Supplier Identifier..... Ultra Cool Products
889 Barton St. Unit #1
Stoney Creek, ON L8E 5V1
Tel: 905-643-0060
Fax: 905-828-8070
Email: info@ultracool
Emergency telephone number and any ...
restrictions on the use of that number Ultra Cool Products: 905-643-0060 (9:00 - 5:00; M-F) . In the event of a transport
emergency contact CANUTEC at (613) 996-6666. .

SECTION 02: HAZARD IDENTIFICATION



Signal Word..... DANGER.
Hazard Classification..... Flammable Gases — Category 1. Gases Under Pressure — Liquefied Gas. Skin
Sensitizer — Category 1.
Hazard Statements..... H220 Extremely flammable gas . H280 Contains gas under pressure; may explode if
heated . H317 May cause an allergic skin reaction.
Prevention..... P210 Keep away from all sources of heat, sparks, open flames, hot surfaces. No smoking.
P261 Avoid breathing dust, vapor, mist or spray. P272 Contaminated work clothing should
not be allowed out of the workplace. P280 Wear protective gloves/protective clothing/eye
protection/face protection.
Response..... P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely . P381 In case
of leakage, eliminate all ignition sources . P302+P352 IF ON SKIN: Wash with plenty of
water. P362+P364 Take off contaminated clothing and wash before reuse. P333+P313 If
skin irritation or rash occurs: Get medical attention. P321 Specific treatment see section 4
on this SDS.
Storage..... P410 + P403 Protect from sunlight. Store in a well-ventilated place .
Disposal..... P501 Dispose of contents and empty containers in accordance with local regulations.
Other hazards..... H412: Harmful to aquatic life with long lasting effects. Avoid release to the environment.
Collect spillage.
Mixture Statement..... This product has been classified based upon the information provided by the supplier.

SECTION 03: COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL NAME AND SYNONYMS	CAS #	WT. %
Petroleum gases, liquefied	68476-85-7	90-99

SECTION 04: FIRST-AID MEASURES

FIRST AID MEASURES:

Skin Contact..... Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. In
case of contact with liquid, warm frozen tissues slowly with lukewarm water and get
medical attention. Do not rub affected area. Get medical attention if symptoms occur. Wash
clothing before reuse. Clean shoes thoroughly before reuse. To avoid the risk of static
discharges and gas ignition, soak contaminated clothing thoroughly with water before
removing it.
Eye Contact..... Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at
least 15 minutes, occasionally lifting the upper and lower eyelids. . Get medical attention
immediately.

PRODUCT: Ultra Cool 1234yf Replacement Refrigerant**CODE: UC-210****SECTION 04: FIRST-AID MEASURES**

Ingestion.....	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if adverse health effects persist or are severe. Ingestion of liquid can cause burns similar to frostbite. If frostbite occurs, get medical attention. Never give anything by mouth to an unconscious person. . If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. As this product rapidly becomes a gas when released, refer to the inhalation section.
Inhalation.....	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. It may be dangerous to the person providing air to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Symptoms and effects.....	Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite. Liquid can cause burns similar to frostbite. Gas can be toxic as a simple asphyxiant by displacing oxygen from the air. Harmful if inhaled. May cause an allergic skin reaction.
Medical attention and special treatment....	Adverse symptoms may include frostbite. Treat symptomatically. In the event of an incident involving this product ensure that medical authorities are provided a copy of this safety data sheet.

SECTION 05: FIRE-FIGHTING MEASURES

Suitable and unsuitable extinguishing media	Dry powder, foam, water spray. Do not extinguish flames unless leak can be stopped.
Specific hazards arising from the hazardous product, such as the nature of any hazardous combustion products	Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. By fire: Protect against potentially toxic and irritating fumes. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If leak cannot be stopped, evacuate area. Fight fire remotely due to the risk of explosion. Cool fire-exposed containers with cold water spray. Heat will cause pressure build up and may cause explosive rupture . Eliminate all ignition sources if safe to do so. Use self-contained breathing apparatus and full firefighting gear. Decomposition and combustion products may be toxic. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Special protective equipment and precautions for fire-fighters	

SECTION 06: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8). No flares, smoking or flames in hazard area. Do not get in eyes, on skin, or on clothing. Do not breathe gas. Avoid dispersal of spilled material and runoff the contact with soil, waterways, drains and sewers. Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment.
Methods and materials for containment and cleaning up	Contact competent authorities after a spill. Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Ventilate area. Prevent product from entering sewers or waterways.

SECTION 07: HANDLING AND STORAGE

Precautions for safe handling.....	Exposure to this product requires prior training and information. Read the information on the label and the safety data sheet before handling this product. Personnel should be trained to regularly inspect equipment such as pumps, hoses, and valves. Contains gas under pressure. Close valve after each use and when empty. Open valve slowly to avoid pressure shock. Put on appropriate personal protective equipment. Wear appropriate respirator when ventilation is inadequate. Avoid contact with skin and eyes. Do not swallow. Do not breathe gas/fumes/vapor/spray. Use only in well-ventilated areas. Handle and open container with care. Launder contaminated clothing before reuse. When using, do not eat or drink. Wash hands before eating, drinking, or smoking. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
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PRODUCT: Ultra Cool 1234yf Replacement Refrigerant**CODE: UC-210****SECTION 07: HANDLING AND STORAGE**

Conditions for safe storage, including any incompatibilities

Comply with applicable regulations. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Store away from all sources of heat and ignition. Keep container tightly closed in a well ventilated area. Store in containers fitted with suitable release valve. Keep at temperatures below 52°C / 125°F. Store away from direct sunlight. Store away from incompatible materials .

SECTION 08: EXPOSURE CONTROLS / PERSONAL PROTECTION

INGREDIENTS	TWA	ACGIH TLV STEL	PEL	OSHA PEL STEL	REL	NIOSH
Petroleum gases, liquefied	1000 ppm	Not established	1800 mg/m ³ (1000 ppm)	Not established	1800 mg/m ³ (1000 ppm)	
Appropriate engineering controls.....	Use local exhaust ventilation to maintain airborne concentrations below the TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it. For guidance on engineering control measures refer to publications such as the ACGIH current edition of 'Industrial Ventilation, a manual of Recommended Practice. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion -proof ventilation equipment. Alarm detectors should be used when toxic and/or flammable gases may be released.					
Individual protection measures, such as personal protective equipment						
Eye/Type.....	Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).					
Gloves/Type.....	Wear skin protection equipment. The selection of skin protection equipment depends on the nature of the work to be performed. Wear cold insulating gloves for thermal hazard protection.					
Footwear/Type.....	Wear safety boots per local regulations.					
Clothing/Type	Wear adequate protective clothing to prevent skin contact.					
Respiratory/Type.....	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi- purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls.					
Other/Type.....	Handle in accordance with good industrial hygiene and safety practice. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse. Emergency eye wash station and shower should be available. Anyone handling this product should wash their hands and face before eating, drinking or using tobacco products. Ensure all national/local regulations are observed.					

SECTION 09: PHYSICAL AND CHEMICAL PROPERTIES

Appearance / physical state	Gas, compressed.
Colour.....	Clear, colourless.
Odour.....	Odour added. Characteristic odour.
Odour Threshold (ppm).....	Not available.
pH.....	Not applicable.
Melting/Freezing Point.....	- 176.67 °C (- 286 °F).
Initial Boiling Point/Boiling Range.....	- 37.8 °C (- 36.1 °F).
Flash Point (deg C), Method.....	Not available.
Evaporation Rate.....	Not available.
Flammability (solid/gas).....	Extremely flammable gas. Liquefied gas.
Upper Flammable Limit (% Vol).....	9.0.
Lower Flammable Limit (% Vol).....	2.6.
Vapour Pressure (mm Hg).....	586.05 kPa (85 psi) @ 21.1 °C (70 °F).
Vapour Density (Air=1).....	1.64 @ 20°C.
Relative Density/Specific Gravity.....	0.53.
Solubility.....	Not available.
Coefficient of Water/Oil Distribution.....	Log Pow: <1.
Auto Ignition Temperature (deg C).....	Not available.
Decomposition temperature.....	Not available.
Viscosity.....	Not applicable.

SECTION 10: STABILITY AND REACTIVITY

Reactivity.....	Contains gas under pressure; may explode if heated. Reacts with oxidants causing fire and explosion hazard. Vapor may ignite if exposed to static discharge.
Chemical stability.....	Stable at normal temperatures and pressures.
Possibility of hazardous reactions.....	Will not polymerize.

PRODUCT: Ultra Cool 1234yf Replacement Refrigerant**CODE: UC-210****SECTION 10: STABILITY AND REACTIVITY**

Conditions to avoid, including static	Avoid sunlight. Avoid extreme temperatures. Avoid all sources of ignition: heat, sparks, discharge, shock or vibration
Incompatible materials.....	open flame. Static discharge.
Hazardous decomposition products.....	Strong oxidizing agents. Chlorine. Permanganates. Dichromates.
	Oxides of carbon.

SECTION 11: TOXICOLOGICAL INFORMATION

INGREDIENTS	LC50	LD50
Petroleum gases, liquefied	658 mg/L (4 hr.)	Not determined
Route of Exposure.....	Skin contact, eye contact, inhalation.	
ATEs.....	Not determined.	
Symptoms related to the physical, chemical and toxicological characteristics		
Effects of Acute Exposure.....	Harmful if inhaled. Asphyxiant gas. Exposure may cause respiratory and / or skin sensitization. Skin contact may cause severe irritation. Liquid can cause burns similar to frostbite. Harmful if absorbed through the skin .	
Effects of Chronic Exposure.....	Intentional misuse by deliberately concentrating and inhaling this product may be harmful or fatal.	
Sensitization.....	May cause an allergic skin reaction.	
Mutagenicity.....	No known mutagenicity effects.	
Reproductive Effects.....	No known reproductive effects. .	
Carcinogenicity of Material.....	None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA OR ACGIH as a carcinogen.	
Specific Target Organ Toxicity - single exposure	This information, if applicable, can be found in Section 2.	
Specific Target Organ Toxicity - repeated exposure	This information, if applicable, can be found in Section 2.	

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity.....	H412: Harmful to aquatic life with long lasting effects . Discharge into the environment must be avoided.
Persistence and degradability.....	Product data not available.
Bioaccumulation Potential.....	Log Pow; <1.
Mobility in soil.....	Product data not available.
Other adverse effects.....	Product data not available.

SECTION 13: DISPOSAL CONSIDERATIONS

Information on safe handling for disposal . and methods of disposal, including any contaminated packaging	Dispose of waste in accordance with all applicable Federal, Provincial/State and local regulations. Empty containers may contain flammable or combustible vapors. Do not reuse without adequate precautions.
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SECTION 14: TRANSPORT INFORMATION

TDG Classification.....	UN1075 - PETROLEUM GASES, LIQUEFIED, 2.1. Limited Quantity: 0.125 L . Refer to Part 1 of Transportation of Dangerous Goods Regulations for additional information.
Transport in bulk / IBC Code.....	No data available.

SECTION 15: REGULATORY INFORMATION

CEPA Status.....	Not reviewed.
TSCA Inventory Status.....	All components are listed on TSCA .

SECTION 16: OTHER INFORMATION

Prepared by	Trivalent Data Systems Ltd. http://www.trivalent.com . Information based on suppliers SDS.
Disclaimer.....	Information for this material safety data sheet was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries for consequential damages, which may result from the use or reliance on any information contained in this form. .
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