

Auto air conditioning 1234YF gas replacement (Hydro-carbon replacement)

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PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: 1234YF gas replacement
SDS Number: 2050
Revision Date: 1/8/2020
Version: 3.0
Product Description: Detect leaks in A/C System
Supplier Details: JD Car Sales
Crossoaks Farm, Crossoaks Lane, Shenley WD6 5PH

Emergency: CHEMTREC 1-800-424-9300PH

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HAZARDS IDENTIFICATION

Classification of Substance

GHS Classification in Accordance with 29 CFR 1910 (OSHA HCS):

Physical, Flammable Gases, 1
Physical, Gases Under Pressure, Liquefied Gas

GHS Label Elements, Including Precautionary Statements

GHS Signal Word: DANGER

GHS Hazard Pictograms:



GHS Hazard Statements:

H220 - Extremely flammable gas
H280 - Contains gas under pressure; may explode if heated
OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.

GHS Precautionary Statements:

P210 - Keep away from heat/sparks/open flames/hot surfaces.
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 - Eliminate all ignition sources if safe to do so.
P410 + P403 - Protect from sunlight. Store in a well-ventilated place.

Hazards not Otherwise Classified (HNOC) or not Covered by GHS

Other Hazards

Contact with the product may cause cold burns or frostbite.

Unknown Acute Toxicity (GHS-US)

No data available

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COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Ingredients:		
CAS#	%	Chemical Name:
587-98-4	0.05%	Benzenesulfonic acid, 3-[[4-(phenylamino)phenyl]azo]-, monosodium salt
-40-7	2.95%	Ester Oil Proprietary*
74-98-6	55.9544%	Propane
106-97-8	41.0156%	Butane

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 within the meaning of the OSHA Hazard Communication Standard [29 CFR 1910.1200].

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FIRST AID MEASURES

- Inhalation:** When symptoms occur: go into open air and ventilate suspected area. Immediately call a POISON CENTER or doctor/physician.
- Skin Contact:** If frost bite occurs, immediately flush with plenty of lukewarm water to GENTLY warm up the affected area. Do not use hot water. Do not rub affected area. Get immediate medical attention.
- Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
- Ingestion:** Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

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.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed

Symptoms/Injuries: Gas can be toxic as simple asphyxiant by displacing oxygen from the air. Refrigerated liquefied gas. Contact with product may cause cold burns or frostbite.

Symptoms/Injuries After Inhalation: Gas can be toxic as a simple asphyxiant by displacing oxygen from the air.

Symptoms/Injuries After Skin Contact: May cause frostbite. May cause skin irritation.

Symptoms/Injuries After Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

Symptoms/Injuries After Ingestion: Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

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

If exposed or concerned, get medical advice and attention.

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FIRE FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Dry powder, foam, alcohol-resistant foam, carbon dioxide (CO₂).

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: Flammable gas

Explosion Hazard: Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

Reactivity: Contains gas under pressure; may explode if heated. Reacts with strong oxidants causing fire/explosion hazard.

5.3. Advice for Firefighters

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

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

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

Other Information: Refer to Section 9 for flammability properties.

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ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Use special care to avoid static electric charges. Keep away from heat, sparks, open flames, hot surfaces, and sources of ignition. No smoking. Do not breathe gas.

6.1.1. For Non-emergency Personnel

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

Emergency Procedures: Evacuate unnecessary personnel. Eliminate ignition sources.

6.1.2. For Emergency Responders

Protective Equipment: Equip clean up crew with proper protection.

Emergency Procedures: Stop leak if safe to do so. Ventilate area.

6.2. Environmental Precautions

Avoid release to environment.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Stop leak without risks if possible. Do not take up in combustible material such as: saw dust or cellulosic material.

Methods for Cleaning Up: Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

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HANDLING AND STORAGE

Handling Precautions:

7.1. Precautions for Safe Handling

Precautions for Safe Handling: Personnel should be trained to regularly inspect equipment such as pumps, hoses, and valves. Do not breathe gas. Ensure there is adequate ventilation. Close valve after each use and when empty. Open valve slowly to avoid pressure shock.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

Storage Requirements:

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Keep at temperatures below 52 °C/125 °F.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep in fireproof place. Store locked up.

Incompatible Products: Heat sources. Oxidizers.

Special Rules on Packaging: Store in containers fitted with suitable release valve.

7.3. Specific End Use(s):

Detect leaks in A/C system.

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EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Alarm detectors should be used when toxic gases may be released. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

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) NIOSH (REL), or OSHA (PEL).

Personal Protective Equipment:

HMIS PP, J I Splash Goggles, Gloves, Apron, Dust and Vapor Resp
Propane cas#:(74-98-6) [55.9544%]

Personal Protective Equipment

Eye/Face Protection: 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).

Skin Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full Contact: Material: Fluorinated rubber Minimum layer thickness: 0.7 mm Break through time: 480 min Material tested: Vitoject (KCL 890 / Aldrich 2677698, Size M)

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PPE



Splash Contact: Material: Nitrile rubber Minimum layer thickness: 0.4 mm Break through time: 60 min Material tested: Camatril (KCL 730 / Aldrich 2677442, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection: Impervious clothing, Flame retardant anti-static protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of Environmental Exposure: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Butane cas#:(106-97-8) (41.0156%)

Personal Protective Equipment

Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Immersion protection Material: Fluorinated rubber Minimum layer thickness: 0.7 mm Break through time:> 480 min Material tested: Vitoject (Aldrich 2677698, Size M)

Splash Protection: Material: Nitrile rubber Minimum layer thickness: 0.4 mm Break through time:> 30 min Material tested: Camatril (Aldrich 2677442, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye Protection: 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).

Skin and Body Protection: Impervious clothing, Flame retardant anti-static protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Propane cas#:(74-98-6) [55.9544%] Components with workplace control parameters

TWA 1,000 ppm USA. ACGIH Threshold Limit Values (TLV)

Central Nervous System impairment Cardiac sensitization

TWA 1,000 ppm 1,800 mg/m³ USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

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The value in mg/m³ is approximate.

TWA 1,000 ppm USA. OSHA- TABLE Z-1 Limits for Air Contaminants- 1910.1000
1,800 mg/m³

TWA 1,000 ppm USA. NIOSH Recommended Exposure Limits
1,800 mg/m³

Butane cas#:(106-97-8) [41.0156%] Components

with workplace control parameters

TWA 800 ppm USA. OSHA- TABLE Z-1 Limits for Air Contaminants- 1910.1000
1,900 mg/m³

TWA 1,000 ppm USA. ACGIH Threshold Limit Values (TLV)

TWA 1,000 ppm USA. ACGIH Threshold Limit Values (TLV)

Central Nervous System impairment Cardiac sensitization

TWA 800 ppm USA. NIOSH Recommended Exposure Limits
1,900 mg/m³

Ester Oil

USA ACGIH ACGIH TWA (mg/m³) : 5mg/m³ (TLV)

USA ACGIH ACGIH STEL (mg/m³) : 10mg/m³

Also see specific listing for Isobutane.

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PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Yellow	Odor:	N/A
Physical State:	Gas	Solubility:	N/A
Odor Threshold:	N/A	Freezing or Melting Point:	N/A
Specific Gravity or Density:	N/A	Flash Point:	N/A
Viscosity:	N/A	Vapor Density:	N/A
Boiling Point:	N/A	Autoignition Temperature:	N/A
Partition Coefficient:	N/A	Upper Flammability Limit and Lower Flammability Limit:	N/A
Vapor Pressure:	N/A		
Potentia Hydrogenii:	N/A		
Evaporation Rate:	N/A		
Decompression Temperature:	N/A		

Other Information

Gas Group: Liquefied Gas

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STABILITY AND REACTIVITY

Reactivity: Contains gas under pressure; may explode if heated. Reacts with strong oxidants causing fire and explosion hazard.

Auto air conditioning 1234YF gas replacement (Hydro-carbon replacement)

Chemical Stability:	Stable under recommended handling and storage conditions (see section 7).
Conditions to Avoid:	Direct sunlight. Extremely high or low temperatures. Open flame. Heat. Sparks.
Materials to Avoid:	Heat. Strong oxidizers.
Hazardous Decomposition:	Carbon oxides (CO, CO ₂).
Hazardous Polymerization:	Hazardous polymerization will not occur.

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TOXICOLOGICAL INFORMATION

Propane cas#:(74-98-6) [55.9544%]

Information on Toxicological Effects

Acute toxicity: No data available

Inhalation: No data available

Dermal: No data available

Skin Corrosion/Irritation: No data available

Serious Eye Damage/Eye Irritation: No data available

Respiratory or Skin Sensitization: No data available

Germ Cell Mutagenicity: No data available

Carcinogenicity: Not classified

IARC:No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH:No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. NTP:No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA:No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive Toxicity: No data available

Specific Target Organ Toxicity - Single Exposure: No data available

Specific Target Organ Toxicity - Repeated Exposure: No data available

Aspiration Hazard: No data available

Additional Information:

RTECS:TX2275000

Dizziness, Drowsiness, Unconsciousness

Butane cas#:(106-97-8) [41.0156%]

Information on Toxicological Effects

Acute Toxicity: No data available

Oral LOSO: No data available

Inhalation LCSO LCSO Inhalation - rat - 4 h - 658,000 mg/m³

Dermal LOSO

Other information on Acute Toxicity-

Skin Corrosion/Irritation: No data available

Serious Eye Damage/Eye Irritation: No data available

Respiratory or Skin Sensitization: No data available

Germ Cell Mutagenicity: No data available

Carcinogenicity: No data available

IARC:No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH:No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. NTP:No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA:No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive Toxicity: No data available

Teratogenicity: No data available

Specific target organ toxicity - single exposure (Globally Harmonized System): No data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System): No data available

Aspiration Hazard: No data available

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Potential Health Effects: Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes: May cause eye irritation.

Signs and Symptoms of Exposure: Central nervous system depression, giddiness, Shortness of breath, narcosis, Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite., Exposure can cause numbness, tingling, and weakness in extremities., Cyanosis, Pulmonary edema. Effects may be delayed., Abdominal pain, Nausea, Vomiting.

Synergistic Effects: No data available

Additional Information:

RTECS: EJ4200000

Benzenesulfonic acid, 3-((4-(phenylamino)phenyl)azo)-, monosodium salt
LD 50 Oral Rat: 5000mg/kg

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ECOLOGICAL INFORMATION

Propane cas#:(74-98-6) [55.9544%]

Information on Ecological Effects

Toxicity: No data available

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available

Mobility in Soil: No data available

Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other Adverse Effects: No data available

Butane cas#:(106-97-8) (41.0156%)

Information on Ecological Effects

Toxicity: No data available

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available

Mobility in Soil: No data available

PBT and vPvB Assessment: No data available

Other Adverse Effects: No data available

Ester Oil cas#(-40-7)

Information on Ecological Effects

Toxicity -

LC50 Fish 1: > Sg/1 (LL50)

Persistence and Degradability: Inherently biodegradable.

Bioaccumulative Potential: The potential for bioaccumulation seems negligible based on data from other similar material and the biodegradability. it is unlikely to breakdown or remain in the air, but rather become absorbed to the soil and sediments and thus not be available to biota.

Mobility in Soil: Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

Other Adverse Effects:

No additional information available

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DISPOSAL CONSIDERATIONS

Propane cas#:(74-98-6) [55.9544 %]

Waste Treatment Methods

Product: Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated Packaging: Dispose of as unused product.

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Butane cas#:(106-97-8) [41.0156%]

Waste Treatment Methods

Product: Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated Packaging: Dispose of as unused product.

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TRANSPORT INFORMATION

14.1. In Accordance with DOT

Consumer Commodity, ORM-D

14.2. In Accordance with IMDG

Proper Shipping Name: PETROLEUM GASES, LIQUEFIED (Propane and Butane)

Hazard Class: 2.1

Identification Number: UN1075

Label Codes: 2.1

EmS-No. (Fire): F-D

EmS-No. (Spillage): S-U

14.3. In Accordance with IATA

Proper Shipping Name: PETROLEUM GASES, LIQUEFIED (Propane and Butane)

Identification Number: UN1075

Hazard Class: 2

Label Codes: 2.1

ERG Code (IATA): 10L



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REGULATORY INFORMATION

[%] RQ (CAS#) Substance - Reg Codes

[0.05%] Benzenesulfonic acid, 3-(14-(phenylamino)phenyl)azo]-, monosodium salt (587-98-4) TSCA

[2.95%] Ester Oil Proprietary* (-40-7)

[55.9544%] Propane (74-98-6) MASS, NJHS, OSHAWAC, PA, TSCA, TXAIR

[41.0156%] Butane (106-97-8) MASS, NJHS, OSHAWAC, PA, TSCA, TXAIR

This product does not contain chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Regulatory Code Legend

TSCA= Toxic Substances Control Act

MASS= MA Massachusetts Hazardous Substances List

NJHS= NJ Right-to-Know Hazardous Substances

OSHAWAC= OSHA Workplace Air Contaminants

PA= PA Right-To-Know List of Hazardous Substances

TXAIR= TX Air Contaminants with Health Effects Screening Level

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OTHER INFORMATION

GHS Full Text Phrases:

Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard Category 2

Eye Dam. 1: Serious eye damage/eye irritation Category 1

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Flam. Gas 1: Flammable gases Category 1 table under recommended handling and storage conditions (see section 7). Direct sunlight. Extremely Liquefied

Gas: Gases under pressure Liquefied gas

Simple Asphy: Simple Asphyxiant

Skin Sens. 1: Skin sensitization Category 1

H220: Extremely flammable gas

H280: Contains gas under pressure; may explode if heated

H317: May cause an allergic skin reaction

H318: Causes serious eye damage

OSHA-H01: May displace oxygen and cause rapid suffocation

H411: Toxic to aquatic life with long lasting effects

Revision Date: 01/08/2020

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