

Enviro-Safe R290 Refrigerant with Proseal & Prodry

1 PRODUCT AND COMPANY IDENTIFICATION

Product Identifier:	Enviro-Safe R290 Refrigerant with Proseal & Prodry
SDS Number:	8002
Revision Date:	10/9/2024
Version:	1.5
Product Use:	R290 refrigerant with dryer and sealant for use in systems that hold R290 refrigerant.
Supplier Details:	Enviro-Safe Refrigerants, Inc. 400 Hanna Drive Pekin, IL 61554
Phone:	309-346-1110
Fax:	309-346-1237
Email:	info@es-refrigerants.com
Internet:	www.es-refrigerants.com
Emergency:	Chemtrec 800-424-9300

2 HAZARDS IDENTIFICATION

Classification of Substance

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

- Physical, Flammable Gases, 1
- Physical, Flammable Liquids, 2
- Physical, Flammable Liquids, 3
- Physical, Gases Under Pressure, Liquefied Gas
- Health, Aspiration hazard, 1
- Health, Skin corrosion/irritation, 2
- Health, Skin corrosion/irritation, 3
- Health, Serious Eye Damage/Eye Irritation, 2 A
- Health, Acute toxicity, 5 Inhalation
- Health, Specific target organ toxicity - Single exposure, 3
- Health, Reproductive toxicity, 2
- Health, Specific target organ toxicity - Repeated exposure, 2
- Environmental, Hazards to the aquatic environment - Acute, 2

GHS Label Elements, Including Precautionary Statements

GHS Signal Word: **DANGER**

GHS Hazard Pictograms:



GHS Hazard Statements:

- H220 - Extremely flammable gas
- H225 - Highly flammable liquid and vapour
- H226 - Flammable liquid and vapour
- H280 - Contains gas under pressure; may explode if heated
- H304 - May be fatal if swallowed and enters airways
- H315 - Causes skin irritation
- H316 - Causes mild skin irritation
- H319 - Causes serious eye irritation
- H333 - May be harmful if inhaled
- H336 - May cause drowsiness or dizziness
- H361 - Suspected of damaging fertility or the unborn child (state specific effect if known)(state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
- H373 - May cause damage to organs (state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)
- H401 - Toxic to aquatic life

Enviro-Safe R290 Refrigerant with Proseal & Prodry

GHS Precautionary Statements:

- P202 - Do not handle until all safety precautions have been read and understood.
- P210 - Keep away from heat/sparks/open flames/hot surfaces.
- P233 - Keep container tightly closed.
- P242 - Use only non-sparking tools.
- P243 - Take precautionary measures against static discharge.
- P260 - Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
- P261 - Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- P264 - Wash skin thoroughly after handling.
- P271 - Use only outdoors or in a well-ventilated area.
- P273 - Avoid release to the environment.
- P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
- P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308 + P313 - IF exposed or concerned: Get medical advice/ attention.
- P321 - Specific treatment (see supplemental first aid instructions on this label).
- P331 - Do NOT induce vomiting.
- P332 + P313 - If skin irritation occurs: Get medical advice/ attention.
- P362 - Take off contaminated clothing and wash before reuse.
- P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
- P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
- P403 + P235 - Store in a well-ventilated place. Keep cool.
- P405 - Store locked up.
- P410 + P403 - Protect from sunlight. Store in a well-ventilated place.
- P501 - Dispose of contents/ container to an approved waste disposal plant.

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

3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Ingredients

CAS#	%	Chemical Name
64-17-5		Ethyl alcohol
78-08-0		Silane, ethenyltriethoxy-
108-88-3		Toluene
68476-85-7		Petroleum gases, liquefied

4 FIRST AID MEASURES

- Inhalation:** When symptoms occur: go to open air or well ventilated area. Immediately call a POISON CENTER or doctor/physician.
- Skin Contact:** If frostbite or freezing occurs, immediately flush with plenty of lukewarm water to GENTLY warm 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. 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.

Enviro-Safe R290 Refrigerant with Proseal & Prodry

5 FIRE FIGHTING MEASURES

Flammability: 1.8 - 8.4 vol%
Autoignition Temperature: 460° C (860° F)
Lower Explosive Limit: 1.8
Upper Explosive Limit: 8.4

5.1 Extinguishing Media

Suitable Extinguishing Media: Dry powder, foam, carbon dioxide.

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: Highly flammable liquid and vapor. Vapors may travel to source of ignition and flash back.

Explosion Hazard: May for flammable/explosive vapor-air mixture.

5.3 Advice for Firefighters

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

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

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

6 ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Avoid breathing (vapor, mist, spray). Use special care to avoid static electric charges. Keep away from heat, sparks, open flames, hot surfaces. No smoking.

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. Eliminate ignition sources. Ventilate area. Evacuate unnecessary personnel.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Clear up spills immediately and dispose of waste safely. Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal. 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.

7 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. Keep at temperatures below 52 °C/125 °F.

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

Incompatible Products: Heat sources. Oxidizers.

7.3. Specific End Use(s): Refrigerant with dryer and sealant.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Ethyl alcohol cas#:(64-17-5) [] : No data.

Silane, ethenyltriethoxy- cas#:(78-08-0) [] : No data.

Toluene cas#:(108-88-3) [] : No data.

Enviro-Safe R290 Refrigerant with Proseal & Prodry

Petroleum gases, liquefied cas#:(68476-85-7) []

Alarm detectors should be used when asphyxiant 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.

Personal Protective Equipment:

Ethyl alcohol cas#:(64-17-5) []

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: butyl-rubber Minimum layer thickness: 0.3 mm Break through time: 480 min Material tested:Butoject (KCL 897 / Aldrich Z677647, Size M)

Splash contact: Material: Nitrile rubber Minimum layer thickness: 0.2 mm Break through time: 38 min Material tested:Dermatril P (KCL 743 / Aldrich Z677388, 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 antistatic 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 ABEK (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.

Silane, ethenyltriethoxy- cas#:(78-08-0) []

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 ABEK (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. Full contact Material: Nitrile rubber Minimum layer thickness: 0.4 mm Break through time: 480 min Material tested:Camatril (KCL 730 / Aldrich Z677442, Size M) Splash contact 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.

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 antistatic protective clothing, The type of protective

Enviro-Safe R290 Refrigerant with Proseal & Prodry

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.

Toluene cas#:(108-88-3) []

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 Z677698, Size M)

Splash contact: Material: Fluorinated rubber Minimum layer thickness: 0.7 mm Break through time: 480 min Material tested: Vitoject (KCL 890 / Aldrich Z677698, 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: Complete suit protecting against chemicals, Flame retardant antistatic 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 ABEK (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. Discharge into the environment must be avoided.

Petroleum gases, liquefied cas#:(68476-85-7) []

Gas mask. Protective goggles. Gloves. Protective clothing.

Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear working gloves when handling gas containers.

Eye Protection: Safety glasses.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: use a NIOSH-approved self-contained breathing apparatus in oxygen deficient atmospheres.

Thermal hazard Protection: Wear cold insulating gloves.

Ethyl alcohol cas#:(64-17-5) []

Components with workplace control parameters

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

Upper Respiratory Tract irritation

Confirmed animal carcinogen with unknown relevance to humans

TWA 1,000 ppm USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air
1,900 mg/m3

Enviro-Safe R290 Refrigerant with Proseal & Prodry

Contaminants

The value in mg/m3 is approximate.

TWA 1,000 ppm USA. NIOSH Recommended
 1,900 mg/m3 Exposure Limits

Silane, ethenyltriethoxy- cas#:(78-08-0) [] : No data.

Toluene cas#:(108-88-3) []

Components with workplace control parameters

TWA 100 ppm USA. OSHA - TABLE Z-1 Limits for
 375 mg/m3 Air Contaminants - 1910.1000

STEL 150 ppm USA. OSHA - TABLE Z-1 Limits for
 560 mg/m3 Air Contaminants - 1910.1000

TWA 200 ppm USA. Occupational Exposure Limits
 (OSHA) - Table Z2
 Z37.12- 1967

CEIL 300 ppm USA. Occupational Exposure Limits
 (OSHA) - Table Z2
 Z37.12- 1967

Peak 500 ppm USA. Occupational Exposure Limits
 (OSHA) - Table Z2
 Z37.12- 1967

TWA 20 ppm USA. ACGIH Threshold Limit Values
 (TLV)

Visual impairment
 Female reproductive
 Pregnancy loss
 2010 Adoption
 Substances for which there is a Biological Exposure Index or Indices
 (see BEI section)
 Not classifiable as a human carcinogen

TWA 100 ppm USA. NIOSH Recommended
 375 mg/m3 Exposure Limits

ST 150 ppm USA. NIOSH Recommended
 560 mg/m3 Exposure Limits

Petroleum gases, liquefied cas#:(68476-85-7) []

Petroleum gases, liquefied (68476-85-7)

USA ACGIH - ACGIH TWA (ppm): 1000ppm
 USA NIOSH - NIOSH REL (TWA) (mg/m3): 1800mg/m3
 USA NIOSH - NIOSH REL (TWA) (ppm): 1000ppm
 USA IDLH - US IDLH (ppm): 2100ppm (10% LEL)
 USA OSHA - OSHA PEL (TWA) (mg/m3): 1800mg/m3
 USA OSHA - OSHA PEL (TWA) (ppm): 1000ppm

9	PHYSICAL AND CHEMICAL PROPERTIES
----------	---

Appearance:	Colorless	Odor:	Sweet
Physical State:	Gas	Molecular Formula:	58 g/mol
Odor Threshold:	No data available		

Enviro-Safe R290 Refrigerant with Proseal & Prodry

Specific Gravity or Density: No data available Viscosity: No data available Boiling Point: -11.7° C (10.94° F) Flammability: 1.8 - 8.4 vol% Partition Coefficient: No data available Vapor Pressure: 300 kPa Potentia Hydrogenii: No data available Evaporation Rate: No data available Decompression Temperature: No data available	Solubility: Water: 54 mg/l Freezing or Melting Point: -159° C (-254° F) Flash Point: -83.15° C (-117.7° F) Vapor Density: > 1 (Heavier than air) Autoignition Temperature: 460 C (860 F) UFL / LFL: No data available
---	--

10
STABILITY AND REACTIVITY

Reactivity:	Contains gas under pressure; may explode if heated. Reacts with oxidants causing fire and explosion hazard.
Chemical Stability:	Stable under recommended handling and storage conditions (see Section 7).
Conditions to Avoid Identification:	Direct sunlight. Extremely high or low temperatures. Open flame. Heat. Sparks.
Materials to Avoid Identification:	Heat. Strong oxidizers.
Hazardous Decomposition:	Carbon oxides (CO, CO ₂).
Hazardous Polymerization:	Will not occur.

11
TOXICOLOGICAL INFORMATION

Ethyl alcohol cas#:(64-17-5) []

Information on toxicological effects

Acute toxicity:

LD50 Oral - rat - 7,060 mg/kg Remarks: Lungs, Thorax, or Respiration:Other changes.

LC50 Inhalation - rat - 10 h - 20000 ppm

Dermal: no data available

Skin corrosion/irritation: Skin - rabbit Result: No skin irritation - 24 h (OECD Test Guideline 404)

Serious eye damage/eye irritation: Eyes - rabbit Result: Mild eye irritation - 24 h (OECD Test Guideline 405)

Respiratory or skin sensitisation: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

Carcinogenicity - mouse - Oral:

Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Liver:Tumors. Blood:Lymphomas including Hodgkins disease.

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.

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

Reproductive toxicity - Human - female - Oral:

Effects on Newborn: Apgar score (human only). Effects on Newborn: Other neonatal measures or effects. Effects on Newborn: Drug dependence.

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: KQ6300000

Central nervous system depression, narcosis, Damage to the heart., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Silane, ethenyltriethoxy- cas#:(78-08-0) []

Enviro-Safe R290 Refrigerant with Proseal & Prodry

Information on toxicological effects

Acute toxicity:

Oral LD50 Inhalation LC50 Dermal LD50 Dermal - rabbit - 9,100 mg/kg

Other information on acute toxicity no data available

Skin corrosion/irritation: Serious eye damage/eye irritation: no data available

Respiratory or skin sensitisation: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

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):

Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System):

no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. Causes respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. Causes skin irritation. Eyes Causes eye irritation.

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects: no data available

Additional Information:

RTECS: VV6700000

Toluene cas#:(108-88-3) []

Information on toxicological effects

Acute toxicity:

LD50 Oral - rat - > 5,580 mg/kg

LC50 Inhalation - rat - 4 h - 12,500 - 28,800 mg/m³

LD50 Dermal - rabbit - 12,196 mg/kg

no data available

Skin corrosion/irritation: Skin - rabbit Result: Skin irritation - 24 h

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitisation: no data available

Germ cell mutagenicity: rat Liver DNA damage

Carcinogenicity:

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Toluene)

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: Damage to fetus possible Suspected human reproductive toxicant

Reproductive toxicity - rat - Inhalation:

Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Enviro-Safe R290 Refrigerant with Proseal & Prodry

Experiments have shown reproductive toxicity effects in male and female laboratory animals.

Developmental Toxicity - rat - Oral:

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

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: XS5250000

Lung irritation, chest pain, pulmonary edema, Inhalation studies on toluene have demonstrated the development of inflammatory and ulcerous lesions of the penis, prepuce, and scrotum in animals.

Stomach - Irregularities - Based on Human Evidence

Petroleum gases, liquefied cas#(68476-85-7)

Information on Toxicology

Acute Toxicity: Not classified

LC50 Inhalation Rat: 658mg/l/4h

Petroleum Oil: > 2000 mg/kg

LD 50 Oral Rat: > 2000 mg/kg

LD50 Dermal Rat: > 2000 mg/kg

LC50 Inhalation Rat: > 2000 mg/kg

Skin Corrosion/Irritation: Not classified

Serious Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitiation: 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

12

ECOLOGICAL INFORMATION

Ethyl alcohol cas#:(64-17-5) []

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

Silane, ethenyltriethoxy- cas#:(78-08-0) []

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

Toluene cas#:(108-88-3) []

Enviro-Safe R290 Refrigerant with Proseal & Prodry

Information on ecological effects

Toxicity:

Toxicity to fish LC50 - *Oncorhynchus mykiss* (rainbow trout) - 7.63 mg/l - 96 h.

NOEC - *Pimephales promelas* (fathead minnow) - 5.44 mg/l - 7 d

Toxicity to daphnia and EC50 - *Daphnia magna* (Water flea) - 8.00 mg/l - 24 h.

other aquatic invertebrates

Immobilization EC50 - *Daphnia magna* (Water flea) - 6 mg/l - 48 h

Toxicity to algae EC50 - *Chlorella vulgaris* (Fresh water algae) - 245.00 mg/l - 24 h.

EC50 - *Pseudokirchneriella subcapitata* (green algae) - 10.00 mg/l - 24 h

Persistence and degradability: Biodegradability Result: - Readily biodegradable.

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: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life.

Petroleum gases, liquefied cas#:(68476-85-7) []

Information on Ecology

Toxicity: No additional information

Persistence and Degradability: No additional information available

Bioaccumulative Potential ---

Enviro-Safe Oil Charge 3

Log Pow: < 1

Petroleum gases, liquefied (68476-85-7)

Log Pow: 2.3

Mobility in Soil: No additional information available

Other Adverse Effects: No additional information available

13

DISPOSAL CONSIDERATIONS

Ethyl alcohol cas#:(64-17-5) []

Waste treatment methods

Product: Contact a licensed professional waste disposal service to dispose of this material. 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.

Contaminated packaging: Dispose of as unused product.

Silane, ethenyltriethoxy- cas#:(78-08-0) []

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.

Toluene cas#:(108-88-3) []

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.

Enviro-Safe R290 Refrigerant with Proseal & Prodry

Petroleum gases, liquefied cas#:(68476-85-7) []

Information on Disposal

Waste Treatment Methods

Waste Disposal Recommendation: Dispose of waste in accordance with all local, regional, national, provincial, territorial and international regulations.

Additional Information: Empty product containers may contain hazardous residue. Do not reuse empty containers without commercial cleaning or reconditioning.

14 TRANSPORT INFORMATION

14.1. In Accordance with DOT

Consumer Commodity, ORM-D

DOT Special Provision: DOT-SP-15593

14.2. In Accordance with IMDG

Proper Shipping Name: PETROLEUM GASES, LIQUEFIED

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

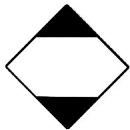
Proper Shipping Name: PETROLEUM GASES, LIQUEFIED

Identification Number: UN1075

Hazard Class: 2

Label Codes: 2.1

ERG Code (IATA): 10L



15 REGULATORY INFORMATION

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

[--%] Ethyl alcohol (64-17-5) MASS, OSHAWAC, PA, TSCA, TSCAACTV, TXAIR

[--%] Silane, ethenyltriethoxy- (78-08-0) TSCA, TSCAACTV

[--%] RQ(1000LBS), Toluene (108-88-3) CERCLA, CSWHS, EPCRAWPC, HAP, MASS, NJHS, OSHAWAC, PA, PRIPOL, PROP65, SARA313, TOXICPOL, TOXICRCRA, TSCA, TSCAACTV, TXAIR, TXHWL

[--%] Petroleum gases, liquefied (68476-85-7) MASS, OSHAWAC, PA, TSCA, TSCAACTV, TXAIR

WARNING This product can expose you to chemicals including Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Regulatory Code Legend

-
- CERCLA = Superfund Cleanup Substances
- CSWHS = Clean Water Act Hazardous Substances
- EPCRAWPC = EPCRA Water Priority Chemicals
- HAP = Hazardous Air Pollutants
- MASS = MA Massachusetts Hazardous Substances List
- NJHS = NJ Right-to-Know Hazardous Substances

Enviro-Safe R290 Refrigerant with Proseal & Prodry

OSHAWAC = OSHA Workplace Air Contaminants
PA = PA Right-To-Know List of Hazardous Substances
PRIPOL = Clean Water Act Priority Pollutants
PROP65 = CA Prop 65
RQ = Reportable Quantity
SARA313 = SARA 313 Title III Toxic Chemicals
TOXICPOL = Clean Water Act Toxic Pollutants
TOXICRCRA = RCRA Toxic Hazardous Wastes (U-List)
TSCA = Toxic Substances Control Act
TSCAACTV = TSCA Active Chemicals
TXAIR = TX Air Contaminants with Health Effects Screening Level
TXHWL = TX Hazardous Waste List

16

OTHER INFORMATION

Disclaimer: Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

Revision Date: 10/9/2024

Print Date: 10/09/2024