

## Enviro-Safe 1234YF Dye Charge

<b>1</b>	<b>PRODUCT AND COMPANY IDENTIFICATION</b>
----------	---

**Product Identifier:** Enviro-Safe 1234YF Dye Charge  
**SDS Number:** 2078  
**Revision Date:** 8/2/2021  
**Version:** 3.0  
**Product Use:** Detect leaks in 1234yf A/C System  
  
**Supplier Details:** Enviro-Safe Refrigerants, Inc.  
 400 Hanna Dr.  
 Pekin, IL 61554  
  
**Contact:** Randy Price  
**Phone:** 309-346-1110  
**Fax:** 309-346-1237  
**Email:** info@es-refrigerants.com  
**Internet:** www.es-refrigerants.com  
**Emergency:** CHEMTREC 1-800-424-9300

<b>2</b>	<b>HAZARDS IDENTIFICATION</b>
----------	-------------------------------

### Classification of Substance

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

- Physical, Flammable Gases, 1
- Physical, Gases Under Pressure, Compressed Gas
- Health, Acute toxicity, 5 Oral
- Health, Respiratory or skin sensitization, 1 Skin

### 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
- H303 - May be harmful if swallowed
- H317 - May cause an allergic skin reaction
- OSHA-H01 - May displace oxygen and cause rapid suffocation
- OSHA-H01 - MAY DISPLACE OXYGEN AND CAUSE RAPID SUFFOCATION.

**GHS Precautionary Statements:**

- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P280 - Wear protective gloves.
- P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
- P381 - In case of leakage, eliminate all ignition sources.
- P403 - Store in a well-ventilated place.
- P410 + P403 - Protect from sunlight. Store in a well-ventilated place.

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

## Enviro-Safe 1234YF Dye Charge

**3**

### COMPOSITION/INFORMATION ON INGREDIENTS

	Chemical Ingredients:	
CAS#	%	Chemical Name:
68476-85-7		Petroleum gases, liquefied
587-98-4		Benzenesulfonic acid, 3-[[4-(phenylamino)phenyl]azo]-, monosodium salt

**4**

### 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.

**5**

### FIRE FIGHTING MEASURES

**Lower Explosive Limit:** 1.9%

**Upper Explosive Limit:** 8.5%

**5.1. Extinguishing Media**

**Suitable Extinguishing Media:** Dry powder, foam, alcohol-resistant foam, carbon dioxide (CO<sub>2</sub>).

**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.

**6**

### 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**

## Enviro-Safe 1234YF Dye Charge

**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.

<b>7</b>	<b>HANDLING AND STORAGE</b>
----------	-----------------------------

<b>Handling Precautions:</b>	<p>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.</p>
<b>Storage Requirements:</b>	<p>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.</p> <p>7.3. Specific End Use(s): Detect leaks in A/C system</p>

<b>8</b>	<b>EXPOSURE CONTROLS/PERSONAL PROTECTION</b>
----------	--

<b>Engineering Controls:</b>	<p>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).</p>
<b>Personal Protective Equipment:</b>	<p>Petroleum gases, liquefied cas#:(68476-85-7)</p> <p>Gas mask. Protective goggles. Gloves. Protective clothing.</p> <p>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.</p> <p>Benzenesulfonic acid, 3-[[4-(phenylamino)phenyl]azo]-, monosodium salt cas#:(587-98-4)</p> <p>Personal protective equipment</p> <p>Respiratory protection: For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).</p> <p>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: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: &gt; 480 min Material tested: Dermatril (Aldrich Z677272, Size M)</p> <p>Splash protection: Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: &gt; 30 min</p>

## Enviro-Safe 1234YF Dye Charge

Material tested: Dermatril (Aldrich Z677272, 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: Complete suit protecting against chemicals, 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.

Petroleum gases, liquefied cas#:(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

Benzenesulfonic acid, 3-[4-(phenylamino)phenyl]azo]-, monosodium salt cas#:(587-98-4)

<b>9</b>	<b>PHYSICAL AND CHEMICAL PROPERTIES</b>
----------	---

<b>Appearance:</b>	Yellow	<b>Odor:</b>	No data available
<b>Physical State:</b>	Gas	<b>Solubility:</b>	No data available
<b>Odor Threshold:</b>	No data available	<b>Freezing or Melting Point:</b>	-166°C (-267.1°F)
<b>Specific Gravity or Density:</b>	540	<b>Flash Point:</b>	-104°C (-155°F)
<b>Viscosity:</b>	No data available	<b>Vapor Density:</b>	1.76
<b>Boiling Point:</b>	-34.7°C (-30.46°F)	<b>Autoignition Temperature:</b>	862.8°C (1585°F)
<b>Partition Coefficient:</b>	<1	<b>Upper Flammability Limit and Lower Flammability Limit:</b>	8.5%/1.9%
<b>Vapor Pressure:</b>	70 @ 21.1°C (70°F)		
<b>Potentia Hydrogenii:</b>	No data available		
<b>Evaporation Rate:</b>	Rapid		
<b>Decompression Temperature:</b>	No data available		

<b>10</b>	<b>STABILITY AND REACTIVITY</b>
-----------	---------------------------------

<b>Reactivity:</b>	Contains gas under pressure; may explode if heated. Reacts with strong oxidants causing fire and explosion hazard.
<b>Chemical Stability:</b>	Stable under recommended handling and storage conditions (see section 7 ).
<b>Conditions to Avoid Identification:</b>	Direct sunlight. Extremely high or low temperatures. Open flame. Heat. Sparks.
<b>Materials to Avoid Identification:</b>	Heat. Strong oxidizers.
<b>Hazardous Decomposition:</b>	Carbon oxides (CO, CO2)
<b>Hazardous Polymerization:</b>	Hazardous polymerization will not occur

## Enviro-Safe 1234YF Dye Charge

11

### TOXICOLOGICAL INFORMATION

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

Benzenesulfonic acid, 3-[[4-(phenylamino)phenyl]azo]-, monosodium salt cas#:(587-98-4)

**Information on toxicological effects**

Acute toxicity:  
 Oral LD50 LD50 Oral - rat - 5,000 mg/kg  
 Inhalation LC50 no data available  
 Dermal LD50  
 Other information on acute toxicity LD50 Intraperitoneal - mouse - 1,000 mg/kg  
 LD50 Intravenous - mouse - 200 mg/kg  
 Skin corrosion/irritation: no data available  
 Serious eye damage/eye irritation: no data available  
 Respiratory or skin sensitization: May cause sensitization by skin contact.  
 Germ cell mutagenicity: Genotoxicity in vitro - Human - lymphocyte Mutation in mammalian somatic cells.  
 Genotoxicity in vitro - Human - leukocyte Cytogenetic analysis  
 Genotoxicity in vivo - mouse - Oral  
 Genotoxicity in vivo - mouse - Intraperitoneal Sister chromatid exchange  
 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: Reproductive toxicity - rat - male:  
 Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).  
 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  
 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.  
 Synergistic effects: no data available  
 Additional Information: RTECS: DB7329500

## Enviro-Safe 1234YF Dye Charge

**12**

### ECOLOGICAL INFORMATION

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

Information on Ecology

Toxicity: No additional information

Persistence and Degradability: No additional information available

Bioaccumulative Potential ---

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

Benzenesulfonic acid, 3-[[4-(phenylamino)phenyl]azo]-, monosodium salt cas#:(587-98-4)

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

**13**

### DISPOSAL CONSIDERATIONS

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.

Benzenesulfonic acid, 3-[[4-(phenylamino)phenyl]azo]-, monosodium salt cas#:(587-98-4)

Waste treatment methods

Product: Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging: Dispose of as unused product.

**14**

### TRANSPORT INFORMATION

14.1. In Accordance with DOT

Consumer Commodity, ORM-D

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

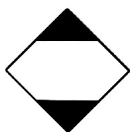
Identification Number: UN1075

Hazard Class: 2

Label Codes: 2.1

ERG Code (IATA): 10L

## Enviro-Safe 1234YF Dye Charge



<b>15</b>	<b>REGULATORY INFORMATION</b>
-----------	-------------------------------

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

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

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

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

Regulatory Code Legend

MASS = MA Massachusetts Hazardous Substances List

OSHA WAC = OSHA Workplace Air Contaminants

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

TSCA = Toxic Substances Control Act

TXAIR = TX Air Contaminants with Health Effects Screening Level

<b>16</b>	<b>OTHER INFORMATION</b>
-----------	--------------------------

HMIS	
HEALTH	<input type="checkbox"/>
FLAMMABILITY	<input type="checkbox"/>
PHYSICAL HAZARD	<input type="checkbox"/>
PERSONAL PROTECTION	<input type="checkbox"/>



J

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).

Author: Jeanette Akright

Publication Date: 6/3/2015

Revision Date: 8/2/2021