

Enviro-Safe 1234YF ProSeal VS

1	PRODUCT AND COMPANY IDENTIFICATION
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Product Identifier:	Enviro-Safe 1234YF ProSeal VS
SDS Number:	2071
Revision Date:	7/29/2021
Version:	3.0
Product Description:	Sealant for 1234yf vehicles
Supplier Details:	Enviro-Safe Refrigerants, Inc. 400 Hanna Dr. Pekin, IL 61554
Contact:	Randy Price
Phone:	309-346-1110
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Internet:	www.es-refrigerants.com
Emergency:	CHEMTREC 1-800-424-9300

2	HAZARDS IDENTIFICATION
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Classification of Substance

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

- Physical, Flammable Liquids, 2
- Physical, Flammable Liquids, 3
- 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:

- H225 - Highly flammable liquid and vapour
- H226 - Flammable liquid and vapour
- 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

GHS Precautionary Statements:

- P201 - Obtain special instructions before use.

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- 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.
- P240 - Ground/bond container and receiving equipment.
- P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- 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.
- P501 - Dispose of contents/ container to an approved waste disposal plant.

3	COMPOSITION/INFORMATION ON INGREDIENTS
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	Chemical Ingredients:	
CAS#	%	Chemical Name:
78-08-0		Silane, ethenyltriethoxy-
108-88-3		Toluene

4	FIRST AID MEASURES
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- Inhalation:** When symptoms occur: go into open air and ventilate suspected 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: Causes serious eye irritation.

Symptoms/Injuries After Inhalation: High concentration of vapours may induce: headache, dizziness, drowsiness, nausea, and vomiting.

Symptoms/Injuries After Skin Contact: May be absorbed through the skin in harmful amounts.

Symptoms/Injuries After Eye Contact: Causes serious eye irritation.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: Causes damage to organs through prolonged or repeated exposure. Suspected of damaging fertility. Suspected of damaging the unborn child.

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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5 FIRE FIGHTING MEASURES

5.1. Extinguishing Media

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

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

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Flammable gas liquid and vapor.

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

Reactivity: Reacts with strong oxidants causing fire and explosion hazard.

5.3. Advice for Firefighters

Precautionary Measures 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 protective equipment, including respiratory protection.

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. No smoking. Do not get in eyes, on skin, or on clothing. 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 the environment.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Stop leak without risks if possible. Do not take up incombustible 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.

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

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

Incompatible Products: Heat sources. Oxidizers.

7.3. Specific End Use(s): A/C Sealant.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

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. Gas detectors should be used when flammable gases/vapours may be released.

Personal Protective Equipment:

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

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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 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.

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Components with workplace control parameters

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TWA	100 ppm 375 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
STEL	150 ppm 560 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air contaminants - 1910.1000
TWA	200 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z2Z37.12- 1967
CEIL	300 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z2Z37.12- 1967
Peak	500 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z2Z37.12- 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 375 mg/m ³	USA. NIOSH Recommended Exposure Limits
ST	150 ppm 560 mg/m ³	USA. NIOSH Recommended Exposure Limits

9	PHYSICAL AND CHEMICAL PROPERTIES
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Appearance:	Clear	Odor:	Alcohol and slight smell of paint thinners (toluene)
Physical State:	Liquid	Solubility:	No data available
Odor Threshold:	No data available	Freezing or Melting Point:	No data available
Specific Gravity or Density: (get rid of spec grav)	0.91(water=1)	Flash Point:	37.8 °C (1,000°F)
Viscosity:	No data available	Vapor Density:	> 1 (Heavier than air)
Boiling Point:	61.7 °C (143 °F)	Autoignition Temperature:	No data available
Partition Coefficient:	No data available	Upper Flammability Limit and Lower Flammability Limit:	No data available
Vapor Pressure:	117.74 hPa	Limit:	
Potentia Hydrogenii:	116.63 hPa		
Evaporation Rate:	< 1		
Decompression Temperature:	No data available		

10	STABILITY AND REACTIVITY
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Reactivity:	Reacts with strong 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:	Hazardous polymerization will not occur.

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TOXICOLOGICAL INFORMATION

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

Information on toxicological effects

Acute toxicity:

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

Other information on acute toxicity no data available

Skin corrosion/irritation: no data available

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

Skin corrosion/irritation: no data available

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).

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.

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Stomach - Irregularities - Based on Human Evidence

12	ECOLOGICAL INFORMATION
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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)

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.

13	DISPOSAL CONSIDERATIONS
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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.

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14	TRANSPORT INFORMATION
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14.1. In Accordance with DOT

Proper Shipping Name: Consumer commodity, ORM-D

14.2. In Accordance with IMDG

Proper Shipping Name: Flammable liquid, nos

Hazard Class: 3

Identification Number: UN1993

Packing Group: II

Label Codes: 3

EmS-No. (Fire): F-E

EmS-No. (Spillage): S-D

Marine Pollutant: No

14.3. In Accordance with IATA

Proper Shipping Name: Flammable Liquid, nos

Identification Number: UN1993

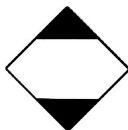
Packing Group: II

Hazard Class: 2

Label Codes: 2.1

ERG Code (IATA): 10L

Marine Pollutant: No



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

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

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

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

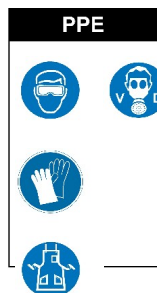
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- RQ = Reportable Quantity
- TSCA = Toxic Substances Control Act
- CERCLA = Superfund clean up substance
- CSWHS = Clean Water Act Hazardous substances
- EPCRAWPC = EPCRA Water Priority Chemicals
- HAP = Hazardous Air Pollutants
- MASS = MA Massachusetts Hazardous Substances List
- NJHS = NJ Right-to-Know Hazardous Substances
- OSHAWAC = OSHA Workplace Air Contaminants
- PA = PA Right-To-Know List of Hazardous Substances
- PRIPOL = Clean Water Act Priority Pollutants
- PROP65 = CA Prop 65
- SARA313 = SARA 313 Title III Toxic Chemicals
- TOXICPOL = Clean Water Act Toxic Pollutants
- TOXICRCRA = RCRA Toxic Hazardous Wastes (U-List)
- TXAIR = TX Air Contaminants with Health Effects Screening Level
- TXHWL = TX Hazardous Waste List

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16 OTHER INFORMATION

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

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