



XPRESS INJECT: SEAL & PROTECT

NOTE: SEAL AND PROTECT CONSISTS OF THE FOLLOWING PRODUCTS:

- EXPRESS INJECT: SYSTEM PROTECT (SDS ATTACHED)
- XPRESS INJECT: SEAL (SDS ATTACHED)

Size | Catalog #

Up to 1.5 Ton | XPS-1.5T-SP

1.5-5 Ton | XPS-5T-SP

6-15 Ton | XPS 15T-SP

16-30 Ton | XPS-30T-SP

31-60 Ton | XPS-60T-SP

61-125 Ton | XPS-125T-SP

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Substance

Product Name: EXPRESS INJECT SYSTEM PROTECT

Size | Catalog #

Up to 5 Ton | XPS-5T-P

126-250 Ton | XPS-250T-P

1.2. Intended Use of the Product

Use of the Substance/Mixture: Eliminates moisture in an air conditioning system

1.3. Name, Address, and Telephone of the Responsible Party

Company

VAPCO PRODUCTS INC.
401 Marshall Rd.
Valley Park, MO 63088

info@vapcoproducts.com
http://www.vapcoproducts.com

Phone: 636-923-2121
Fax: 636-923-3002

1.4. Emergency Telephone Number

Emergency Number : 1-800-255-3924

CHEMTREC – TOLL FREE 24 HOUR EMERGENCY TELEPHONE NUMBER

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Flam. Liq. 2 H225

Eye Irrit. 2A H319

Full text of H-phrases: see section 16

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H225 - Highly flammable liquid and vapor.
H319 - Causes serious eye irritation.

Precautionary Statements (GHS-US)

: P210 - Keep away from extremely high or low temperatures, ignition sources, and incompatible materials. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P280 - Wear protective gloves, protective clothing, and eye protection.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P370+P378 - In case of fire: Use appropriate media (see section 5) to extinguish.
P403+P235 - Store in a well-ventilated place. Keep cool.
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

2.3. Other Hazards

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

2.4. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS
3.1. Substance

Name : Vapco Products Xpress Seal Dry Direct Inject

Name	Product Identifier	%	Classification (GHS-US)
Ethyl alcohol	(CAS No) 64-17-5	100	Flam. Liq. 2, H225 Eye Irrit. 2A, H319

3.2. Mixture

Not applicable

SECTION 4: FIRST AID MEASURES
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 (show the label if possible).

First-aid Measures After Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

First-aid Measures After Skin Contact: Remove contaminated clothing. Gently wash with plenty of soap and water followed by rinsing with water for at least 15 minutes. Call a POISON CENTER or doctor/physician if you feel unwell. Wash contaminated clothing before reuse.

First-aid Measures After Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

First-aid Measures After Ingestion: Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/Injuries: Causes serious eye irritation.

Symptoms/Injuries After Inhalation: May cause respiratory irritation.

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

Symptoms/Injuries After Eye Contact: Causes serious eye irritation. Symptoms may include: Redness, pain, swelling, itching, burning, tearing, and blurred vision.

Chronic Symptoms: None expected under normal conditions of use.

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

If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES
5.1. Extinguishing Media

Suitable Extinguishing Media: Powder, alcohol-resistant foam, water spray, 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: Highly flammable liquid and vapor. Vapors may travel to source of ignition and flash back.

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

Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Precautionary Measures 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 protective equipment, including respiratory protection.

Other Information: Refer to Section 9 for flammability properties.

SECTION 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.

6.1.2. For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection.

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

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.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Handle empty containers with care because residual vapors are flammable.

Precautions for Safe Handling: Take precautionary measures against static discharge. Use only non-sparking tools. Keep away from heat, sparks, open flames, hot surfaces. – No smoking.

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 when leaving work.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical, ventilating, lighting equipment.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Incompatible Products: Strong acids. Strong bases. Strong oxidizers. Zinc. Attacks some forms of plastics, rubber, and coatings. Brass. Aluminum.

7.3. Specific End Use(s)

Eliminates moisture in an air conditioning system

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

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).

Ethyl alcohol (64-17-5)		
USA ACGIH	ACGIH STEL (ppm)	1000 ppm
USA ACGIH	ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	1900 mg/m ³
USA NIOSH	NIOSH REL (TWA) (ppm)	1000 ppm
USA IDLH	US IDLH (ppm)	3300 ppm (10% LEL)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1900 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

8.2. Exposure Controls

Appropriate Engineering Controls

: Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof equipment. Take precautionary measures against static discharges. Ensure all national/local regulations are observed. Gas detectors should be used when flammable gases/vapors may be released. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal Protective Equipment

: Protective goggles. Gloves. Protective clothing. Insufficient ventilation: wear respiratory protection.



Materials for Protective Clothing

: Chemically resistant materials and fabrics.

Hand Protection

: Wear chemically resistant protective gloves.

Eye Protection

: Chemical safety goggles.

Skin and Body Protection

: Wear suitable protective clothing.



- Respiratory Protection** : Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.
- Environmental Exposure Controls** : Do not allow the product to be released into the environment.
- Consumer Exposure Controls** : Do not eat, drink or smoke during use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

- Physical State** : Liquid
- Appearance** : No data available
- Odor** : No data available
- Odor Threshold** : No data available
- pH** : No data available
- Evaporation Rate** : No data available
- Melting Point** : -114.14 °C (-173.45 °F) (Ethyl Alcohol)
- Freezing Point** : No data available
- Boiling Point** : 78.29 °C (172.92 °F) (Ethyl Alcohol)
- Flash Point** : 13 °C (55.40 °F) (Ethyl Alcohol)
- Auto-ignition Temperature** : 363 °C (685.40 °F) (Ethyl Alcohol)
- Decomposition Temperature** : No data available
- Flammability (solid, gas)** : No data available
- Vapor Pressure** : No data available
- Relative Vapor Density at 20 °C** : No data available
- Relative Density** : No data available
- Specific gravity / density** : 0.7893 g/cm³ at 20 °C (Ethyl Alcohol)
- Solubility** : No data available
- Partition Coefficient: N-Octanol/Water** : No data available
- Viscosity** : No data available

9.2. Other Information No additional information available

SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:** Hazardous reactions will not occur under normal conditions.
- 10.2. Chemical Stability:** Highly flammable liquid and vapor. May form flammable/explosive vapor-air mixture.
- 10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. Conditions to Avoid:** Direct sunlight. Extremely high or low temperatures. Ignition sources. Incompatible materials. Open flame. Overheating. Heat. Sparks.
- 10.5. Incompatible Materials:** Strong acids. Strong bases. Strong oxidizers. Zinc. Attacks some forms of plastics, rubber, and coatings. Brass. Aluminum.
- 10.6. Hazardous Decomposition Products:** Carbon oxides (CO, CO₂). May release flammable gases.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information On Toxicological Effects

Acute Toxicity: Not classified

Vapco Products Xpress Seal Dry Direct Inject	
ATE (Dust/Mist)	4.62 mg/l/4h
Ethyl alcohol (64-17-5)	
LD50 Oral Rat	10470 mg/kg
LD50 Dermal Rat	20 ml/kg
LC50 Inhalation Rat	124.7 mg/l/4h

Skin Corrosion/Irritation: Not classified

Serious Eye Damage/Irritation: Causes serious eye irritation.

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Ethyl alcohol (64-17-5)	
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): Not classified
Specific Target Organ Toxicity (Repeated Exposure): Not classified
Aspiration Hazard: Not classified
Symptoms/Injuries After Inhalation: May cause respiratory irritation.
Symptoms/Injuries After Skin Contact: May cause skin irritation.
Symptoms/Injuries After Eye Contact: Causes serious eye irritation. Symptoms may include: Redness, pain, swelling, itching, burning, tearing, and blurred vision.
Chronic Symptoms: None expected under normal conditions of use.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ethyl alcohol (64-17-5)	
LC50 Fish 1	(Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 1	9268 - 14221 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC 50 Fish 2	> 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

12.2. Persistence and Degradability

Ethyl alcohol (64-17-5)	
Persistence and Degradability	Not established.

12.3. Bioaccumulative Potential

Ethyl alcohol (64-17-5)	
Log Pow	-0.32
Bioaccumulative Potential	Not established.

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information : Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.

Additional Information: Handle empty containers with care because residual vapors are flammable.

Ecology – Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

14.1. In Accordance with DOT

Consumer Commodity ORM-D

14.2. In Accordance with IMDG

Proper Shipping Name : ETHANOL (ETHYL ALCOHOL)
Hazard Class : 3
Identification Number : UN1170
Packing Group : II
Label Codes : 3
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D



14.3. In Accordance with IATA

Proper Shipping Name : ETHYL ALCOHOL
Packing Group : II
Identification Number : UN1170
Hazard Class : 3
Label Codes : 3
ERG Code (IATA) : 3L





SECTION 15: REGULATORY INFORMATION

15.1 US Federal Regulations

Vapco Products Xpress Seal Dry Direct Inject	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Fire hazard
Ethyl alcohol (64-17-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2 US State Regulations

Ethyl alcohol (64-17-5)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.
U.S. - California - Proposition 65 - Developmental Toxicity	WARNING: This product contains chemicals known to the State of California to cause birth defects.
Ethyl alcohol (64-17-5)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 7-1-2017 - Rev.1, March 15, 2019
Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 2	Flammable liquids Category 2
H225	Highly flammable liquid and vapor
H319	Causes serious eye irritation

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Vapco Products Xpress Inject: SEAL

1 PRODUCT AND COMPANY IDENTIFICATION

Product Identifier:	Vapco Products Xpress Inject: SEAL	Size and Catalog #
Product Use:	A/C Sealant	Up to 1.5 Ton XPS-SS
Supplier Details:	Vapco Products 401 Marshall Rd Valley Park, MO 63088	1.5-5 Ton XPS-5T
		6-15Ton XPS-15T
		16-30 Ton XPS-30T
		31-60 Ton XPS-60T
Emergency:	Chemtel	61-125 Ton XPS-125T
Contact:	1-800-255-3924	126-250 Ton XPS-250T
Phone:	636-923-2121	
Fax:	636-923-3002	
Email:	info@VapcoProducts.com	Large Leak Version
Web:	http://www.vapcoproducts.com	1.5-5 Ton XPS-5XL

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

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

- Health, Aspiration hazard, 1
- Physical, Flammable Liquids, 2
- Health, Skin corrosion/irritation, 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:

- H304 - May be fatal if swallowed and enters airways
- H225 - Highly flammable liquid and vapor
- H315 - Causes skin irritation
- H401 - Toxic to aquatic life

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. No smoking
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
- P264 - Wash hands and arms 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+310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- P303+361+353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P308+313 - IF exposed or concerned: Get medical advice/attention.
- P321 - Specific treatment (see Section 4 on this SDS).
- P331 - Do NOT induce vomiting.
- P332+313 - If skin irritation occurs: Get medical advice/attention.

P362 - Take off contaminated clothing and wash before reuse.
P370+378 - In case of fire: Use dry chemical for extinction.
P403+235 - Store in a well ventilated place. Keep cool.
P501 - Dispose of contents/container according to local/state/federal regulations.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas#	%	Chemical Name
64-17-5	2-25%	Ethyl alcohol
108-88-3	<1%	Toluene
78-08-0	20-75%	Silane, ethenyltriethoxy-

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: 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.

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 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 liquid.
Explosion Hazard: Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
Reactivity: May explode if heated. 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 open flames, hot surfaces and sources of ignition. 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 cleanup 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 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.

Handling Precautions:

7.1. Precautions for Safe Handling

Precautions for Safe Handling: Ensure there is adequate ventilation.

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.

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 and oxidizers.

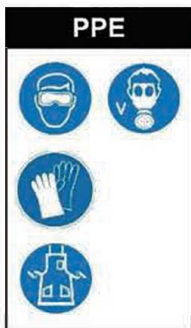
Engineering Controls:

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.

Personal Protective Equipment:

Ethyl alcohol (64-17-5) [2-25%]

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 Breakthrough 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.

Toluene (108-88-3) [<1%]

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.

Silane, ethenyltriethoxy- (78-08-0) [20-75%]

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 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.

Ethyl alcohol (64-17-5) [2-25%]

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 1,900 mg/m3
(OSHA) - Table Z-1 Limits for Air Contaminants The value in mg/m3 is approximate.

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

Exposure Limits

Toluene (108-88-3) [<1%]

Components with workplace control parameters

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

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

TWA 200 ppm USA. Occupational Exposure Limits
(OSHA) - Table Z2237.12- 1967

CEIL 300 ppm USA. Occupational Exposure Limits (OSHA) - Table Z2237.12- 1967

Peak 500 ppm USA. Occupational Exposure Limits (OSHA) - Table Z2237.12- 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 Exposure Limits
375 mg/m3

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

Silane, ethenyltriethoxy- (78-08-0) [20-75%] : no data available

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear

Physical State: Liquid

Odor: Amine Odor
Vapor Density: >1 (Heavier than Air)

10 STABILITY AND REACTIVITY

Reactivity: Reacts with oxidants causing fire and explosion hazard.

Chemical Stability: Stable under recommended handling and storage conditions

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

Ethyl alcohol (64-17-5) [2-25%]

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 sensitization: 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 presents 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 presents 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 presents 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

Toluene (108-88-3) [<1%]

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 sensitization: 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.

Stomach - Irregularities - Based on Human Evidence

Silane, ethenyltriethoxy- (78-08-0) [20-75%]

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 sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

IARC: No component of this product presents 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 presents 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 presents 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 presents 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

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ECOLOGICAL INFORMATION

Ethyl alcohol (64-17-5) [2-25%]

Information on ecological effects

Toxicity: no data available

Persistence and degradability: no data available

Bio accumulative 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

Toluene (108-88-3) [<1%]

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. Bio accumulative 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.

Silane, ethenyltriethoxy- (78-08-0) [20-75%]

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

Ethyl alcohol (64-17-5) [2-25%]

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.

Toluene (108-88-3) [<1%]

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.

Silane, ethenyltriethoxy- (78-08-0) [20-75%]

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.

DOT: Consumer Commodity, ORM-D



IATA: UN1993, Flammable liquids, n.o.s., 3, PGIII



IMDG: UN1993, Flammable liquids, n.o.s., 3, PGIII



Component (CAS#) [%] - CODES

Ethyl alcohol (64-17-5) [2-25%] MASS, OSHAWAC, PA, TSCA, TXAIR

RQ(1000LBS), Toluene (108-88-3) [<1%] CERCLA, CSWHS, EPCRAWPC, HAP, MASS, NJHS, OSHAWAC, PA, PRIPOL, PROP65, SARA313, TOXICPOL, TOXICRCRA, TSCA, TXAIR, TXHWL

Silane, ethenyltriethoxy- (78-08-0) [20-75%] TSCA

Regulatory CODE Descriptions

RQ = Reportable Quantity

MASS = MA Massachusetts Hazardous Substances List
OSHAWAC = 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
CERCLA = Superfund clean up substance
CSWHS = Clean Water Act Hazardous substances
EPCRAWPC = EPCRA Water Priority Chemicals
HAP = Hazardous Air Pollutants
NJHS = NJ Right-to-Know 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)
TXHWL = TX Hazardous Waste List

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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).

This information is given in good faith and based on our current knowledge of the product.

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