Distributor: SPI Supplies / Structure Probe Inc.
206 Garfield Avenue
West Chester, PA 19380
Phone: 610-436-5400; 1-800-242-4774
Fax: 610-436-5755
Email: sales @2spi.com
SPI Catalog #: 05051-AB

Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name • **Vacseal® High Vacuum Leak Sealant, Aerosol**

Synonyms • Vacseal, Vacuum Leak Sealant, Aerosol, Clear

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified use(s) Primarily used for sealing leaks in high and ultra-high vacuum systems.

1.3 Details of the supplier of the safety data sheet

Manufacturer

- Space Environment Labs. - Vacseal Inc.
- P.O. Box 1061
- Boulder Colorado 80306
- www.vaceal.net
-

World Wide Distributor: Structure Probe, Inc. www.2spi.com 1-610-436-5755

1.4 Emergency telephone number

- 1-(800)-424-9300 - Chemtrec
- 1-(703)-741-5970 - Worldwide

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 2015/830]

2.1 Classification of the substance or mixture

CLP

- Skin Irritation 2 - H315
  Eye Irritation 2 - H319
  Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects - H336
  Germ Cell Mutagenicity 2 - H341
  Carcinogenicity 1B - H350
  Hazardous to the aquatic environment Chronic 3 - H412

2.2 Label Elements

CLP

Warning

Hazard statements • H315 - Causes skin irritation

H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness

H341 - Suspected of causing genetic defects.
H350 - May cause cancer.
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements

Prevention

- P201 - Obtain special instructions before use.
  P202 - Do not handle until all safety precautions have been read and understood.
  P261 - Avoid breathing mist, vapours and/or spray.
  P264 - Wash 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.
  P281 - Use personal protective equipment as required.

Response

- P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
  P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
  P321 - Specific treatment, see supplemental first aid information.
  P362 - Take off contaminated clothing and wash before reuse.
  P332+P313 - If skin irritation occurs: Get medical advice/attention.
  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.
  P308+P313 - IF exposed or concerned: Get medical advice/attention.

Storage/Disposal

- P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
  P405 - Store locked up.
  P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other Hazards

CLP

- According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012

- Acute Toxicity Oral 4
  Skin Irritation 2
  Eye Irritation 2
  Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
  Germ Cell Mutagenicity 2
  Carcinogenicity 1A
  Reproductive Toxicity 1B
  Specific Target Organ Toxicity Repeated Exposure 2

2.2 Label elements

OSHA HCS 2012

Warning

Hazard statements

- Harmful if swallowed
  Causes skin irritation
  Causes serious eye irritation
  May cause drowsiness or dizziness
  Suspected of causing genetic defects.
  May cause cancer.
  May damage fertility or the unborn child.

May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention
- Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe mist, vapours and/or spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

Response
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.
If on skin: Wash with plenty of water .
Specific treatment, see supplemental first aid information.
Take off contaminated clothing and wash before reuse.
If skin irritation occurs: Get medical advice/attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
Rinse mouth.
IF exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.

Storage/Disposal
- Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information
- 10-20 percent of this product consists of an ingredient of unknown toxicity.

2.3 Other hazards

OSHA HCS 2012
- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance.

3.2 Mixtures

Composition					
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**	**Comments**
Ethylene, trichloro-	**CAS:**79-01-6 **EC Number:**201-167-4 **EU Index:**602-027-00-9	30% TO 60%	Skin-Rabbit LD50 • >20 g/kg Inhalation-Rat LC50 • 140700 mg/m³ 1 Hour(s) Ingestion/Oral-Rat LD50 • 4920 mg/kg	**EU CLP:** Annex VI, Table 3.1: Carc. 1B, H350; Muta. 2, H341; Eye Irrit. 2, H319; Skin Irrit. 2, H315; STOT SE 3: Narc., H336; Aquatic Chronic 3, H412 **OSHA HCS 2012:** Flam. Liq. 4; Carc. 1A; Muta. 2; Eye Irrit. 2; Skin Irrit. 2; STOT SE 3: Narc.; Repr. 2; Asp. Tox. 1	NDA
Dichloromethane	**CAS:**75-09-2 **EC Number:**200-838-9 **EU Index:**602-004-00-3	15% TO 30%	Ingestion/Oral-Rat LD50 • 985 mg/kg Inhalation-Rat LC50 • 52000 mg/m³ 6 Hour (s)	**EU CLP:** Annex VI, Table 3.1: Carc. 2, H351 (Inhl) **OSHA HCS 2012:** Acute Tox. 4 (Orl); Skin Irrit. 2; Eye Irrit. 2; Muta. 2 (Orl, Inhl); Carc. 2 (Inhl); STOT SE 3: Narc.	NDA

HFC-134a	**CAS:**811-97-2 **EC Number:**212-377-0	10% TO 20%	Inhalation-Rat LC50 • 1500 g/m³ 4 Hour(s)	**EU CLP:** Press. Gas - Liq., H280 **OSHA HCS 2012:** Press. Gas - Liq.; Simp. Asphyx.	NDA
Xylene	**CAS:**1330-20-7 **EC Number:**215-535-7 **EU Index:**601-022-00-9	5% TO 10%	Ingestion/Oral-Rat LD50 • 4300 mg/kg Inhalation-Rat LC50 • 5000 ppm 4 Hour(s) Skin-Rabbit LD50 • >1700 mg/kg	**EU CLP:** Annex VI, Table 3.1: Flam. Liq. 3, H226; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315 **OSHA HCS 2012:** Flam. Liq. 3; Acute Tox. 4 (Inhl); Skin Irrit. 2; Eye Irrit. 2; Repr. 1B (Inhl); STOT SE 3: Narc.; STOT SE 3: Resp. Irrit.	NDA
Ethylbenzene	**CAS:**100-41-4 **EC Number:**202-849-4 **EU Index:**601-023-00-4	1% TO 5%	Ingestion/Oral-Rat LD50 • 3500 mg/kg Skin-Rabbit LD50 • 17800 µL/kg	**EU CLP:** Annex VI, Table 3.1: Flam. Liq. 2, H225; Acute Tox. 4, H332; STOT RE 2, H373 (Ear, Inhl); Asp. Tox. 1, H304 **OSHA HCS 2012:** Flam. Liq. 2; Acute Tox. 4 (Inhl); Eye Irrit. 2; Carc. 2 (Inhl); Repr. 2 (Inhl); STOT SE 3: Narc.; STOT SE 3: Resp. Irrit. (Inhl); STOT RE 2 (Ear, Inhl); Asp. Tox. 1	NDA

See Section 16 for full text of H-statements.

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation
- Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Get medical attention immediately.

Skin
- Wash skin with soap and water. Remove and isolate contaminated clothing. If irritation develops and persists, get medical attention.

Eye
- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion
- Do NOT induce vomiting. Obtain medical attention immediately if ingested.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media
- Dry Chemical, water fog, foam, carbon dioxide, water spray.

Unsuitable Extinguishing Media
- No data available

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- Cylinders may rupture, explode or become a projectile under fire conditions.

Hazardous Combustion Products
- Carbon oxides and traces of incompletely burned carbon compounds; silicon dioxide; metal oxides; formaldehyde.

5.3 Advice for firefighters

- Structural firefighters' protective clothing will only provide limited protection.

Wear positive pressure self-contained breathing apparatus (SCBA).
Move containers from fire area if you can do it without risk.
LARGE FIRES: Cool containers with flooding quantities of water until well after fire is out.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions

- Do not walk through spilled material. Use appropriate Personal Protective Equipment (PPE)

Emergency Procedures

- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

6.2 Environmental precautions

- Avoid run off to waterways and sewers.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Stop leak if you can do it without risk.
  Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling

- Use only in well ventilated areas. Traces of benzene (carcinogen) may form if heated in air above 149°C. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapours and/or spray. Avoid contact with skin, eyes, and clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

Storage

- Store in a cool, dry, well-ventilated place. Keep away from heat, sparks, and flame.

7.3 Specific end use(s)

- This item is not for clinical or diagnostic applications, agricultural uses or for human or animal consumption. Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines				
	Result	**ACGIH**	**NIOSH**	**OSHA**
Ethylbenzene (100-41-4)	TWAs	20 ppm TWA	100 ppm TWA; 435 mg/m3 TWA	100 ppm TWA; 435 mg/m3 TWA
	STELs	Not established	125 ppm STEL; 545 mg/m3 STEL	Not established
Xylene (1330-20-7)	TWAs	100 ppm TWA	Not established	100 ppm TWA; 435 mg/m3 TWA
	STELs	150 ppm STEL	Not established	Not established
Dichloromethane	STELs	Not established	Not established	125 ppm STEL (see 29 CFR 1910.1052)

(75-09-2)	TWAs	50 ppm TWA	Not established	25 ppm TWA
Ethylene, trichloro- (79-01-6)	Ceilings	Not established	Not established	200 ppm Ceiling
	TWAs	10 ppm TWA	Not established	100 ppm TWA
	STELs	25 ppm STEL	Not established	Not established

8.2 Exposure controls

Engineering Measures/Controls
- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

Respiratory
- Follow the OSHA respirator regulations found in 29 CFR 1910.134. Use a NIOSH/MSHA approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face
- Wear chemical splash safety goggles.

Skin/Body
- Wear appropriate gloves. Wear long sleeves and/or protective coveralls.

Environmental Exposure Controls
- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Additional Protection Measures
- An eyewash station and emergency shower must be available to the work station.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
NIOSH = National Institute of Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
STEL = Short Term Exposure Limits are based on 15-minute exposures
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Colorless to pale yellow liquid with solvent odor.
Color	Colorless to pale yellow.	Odor	Solvent odor.
Odor Threshold	Data lacking		
General Properties			
Boiling Point	> 100 °C(> 212 °F)	Melting Point/Freezing Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	= 1.01 Water=1	Water Solubility	Data lacking
Viscosity	105 Centistoke (cSt, cS) or mm2/sec	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			
Vapor Pressure	Data lacking	Vapor Density	Data lacking
Evaporation Rate	Data lacking		
Flammability			
Flash Point	Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		

Environmental			
Octanol/Water Partition coefficient	Data lacking		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under normal temperatures and pressures.

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Excess heat.

10.5 Incompatible materials

- Oxidizing material can cause a reaction.

10.6 Hazardous decomposition products

- Carbon oxides and traces of incompletely burned carbon compounds.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
Ethylene, trichloro- (30% TO 60%)	79-01-6	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 4920 mg/kg; Inhalation-Rat LC50 • 140700 mg/m³ 1 Hour(s); Skin-Rabbit LD50 • 20 mL/kg; **Irritation:** Eye-Rabbit • 20 mg 24 Hour(s) • Moderate irritation; Skin-Rabbit • 2 mg 24 Hour(s) • Severe irritation; **Multi-dose Toxicity:** Ingestion/Oral-Mouse TDLo • 22.4 mg/kg 32 Week(s)-Continuous; *Liver*:**Hepatitis (hepatocellular necrosis), diffuse**; *Skin and Appendages:After systemic exposure*:**Dermatitis, other**; *Immunological Including Allergic*:**Autoimmune**; Inhalation-Mouse TCLo • 500 ppm 4 Week(s)-Intermittent; *Liver*:**Hepatitis (hepatocellular necrosis), zonal**; *Endocrine*:**Other changes**; *Immunological Including Allergic*:**Decrease in humoral immune response**; Inhalation-Rat TCLo • 500 ppm 182 Day(s)-Intermittent; *Kidney, Ureter, and Bladder*:**Interstitial nephritis**; *Kidney, Ureter, and Bladder*:**Renal function tests depressed**; **Mutagen:** Sperm Morphology • Inhalation-Mouse • 100 ppm; Micronucleus test • Inhalation-Rat • 5 ppm 6 Hour(s)-Continuous; **Reproductive:** Ingestion/Oral-Rat TDLo • 1140 mg/kg (14D pre-21D post); *Reproductive Effects:Specific Developmental Abnormalities*:**Central nervous system**; Ingestion/Oral-Rat TDLo • 76 mg/kg (multigenerations); *Reproductive Effects:Specific Developmental Abnormalities*:**Hepatobiliary system**; *Reproductive Effects:Specific Developmental Abnormalities*:**Urogenital system**; *Reproductive Effects:Effects on Newborn*:**Growth statistics (e.g., reduced weight gain)**; **Tumorigen / Carcinogen:** Inhalation-Rat TCLo • 150 ppm 7 Hour(s) 2 Year(s)-Intermittent; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Lungs, Thorax, or Respiration*:**Tumors**; *Skin and Appendages:Other*:**Tumors**
Dichloromethane (15% TO 30%)	75-09-2	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 985 mg/kg; Ingestion/Oral-Human LDLo • 357 mg/kg; *Peripheral Nerve and Sensation*:**Paresthesis**; *Behavioral*:**Somnolence (general depressed activity)**; *Behavioral*:**Convulsions or effect on seizure threshold**; Ingestion/Oral-Rat TDLo • 237.8 mg/kg; *Kidney, Ureter, and Bladder*:**Changes in tubules (including acute renal failure, acute tubular necrosis)**; Inhalation-Rat LC50 • 52000 mg/m³ 6 Hour(s); **Irritation:** Eye-Rabbit • 162 mg • Moderate irritation; Skin-Rabbit • 810 mg 24 Hour(s) • Severe irritation; **Multi-dose Toxicity:** Ingestion/Oral-Rat TDLo • 91 g/kg 2 Year(s)-Continuous; *Behavioral*:**Fluid intake**; *Liver*:**Fatty**

		liver degeneration; *Nutritional and Gross Metabolic:Gross Metabolite Changes*:**Weight loss or decreased weight gain**; **Mutagen:** Sister chromatid exchange • Inhalation-Mouse • 13880 mg/m³ 6 Hour(s) 2 Week(s)-Intermittent
HFC-134a (10% TO 20%)	811-97-2	**Acute Toxicity:** Inhalation-Rat LC50 • 1500 g/m³ 4 Hour(s)
Xylene (5% TO 10%)	1330-20-7	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 4300 mg/kg; *Liver*:**Other changes**; *Kidney, Ureter, and Bladder*:**Other changes**; Inhalation-Rat LC50 • 5000 ppm 4 Hour(s); Inhalation-Man LCLo • 10000 ppm 6 Hour(s); *Behavioral*:**General anesthetic**; *Lungs, Thorax, or Respiration*:**Cyanosis**; *Blood*:**Other changes**; Inhalation-Human TCLo • 200 ppm; *Sense Organs and Special Senses:Olfaction*:**Other changes**; *Sense Organs and Special Senses:Eye*:**Conjunctive irritation**; *Lungs, Thorax, or Respiration*:**Other changes**; Skin-Rabbit LD50 • >1700 mg/kg; **Irritation:** Eye-Rabbit • 5 mg 24 Hour(s) • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Moderate irritation; **Reproductive:** Inhalation-Rabbit TCLo • 1 g/m³ 24 Hour(s)(7-20D preg); *Reproductive Effects:Effects on Fertility*:**Abortion**; Inhalation-Rat TCLo • 50 mg/m³ 6 Hour(s)(1-21D preg); *Reproductive Effects:Effects on Fertility*:**Post-implantation mortality**; *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; *Reproductive Effects:Specific Developmental Abnormalities*:**Craniofacial (including nose and tongue)**; Inhalation-Rat TDLo • 200 ppm 6 Hour(s)(4-20D preg); *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; *Reproductive Effects:Effects on Newborn*:**Behavioral**
Ethylbenzene (1% TO 5%)	100-41-4	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 3500 mg/kg; Inhalation-Guinea Pig LCLo • 2500 ppm 8 Hour(s); *Behavioral*:**Coma**; Inhalation-Human TCLo • 21700 mg/m³; *Behavioral*:**Antipsychotic**; Inhalation-Mouse TCLo • 600 ppm 6 Minute(s); *Lungs, Thorax, or Respiration*:**Respiratory depression**; Skin-Rabbit LD50 • 17800 µL/kg; **Irritation:** Eye-Rabbit • 500 mg • Severe irritation; Skin-Rabbit • 15 mg 24 Hour(s)-Open • Mild irritation; **Multi-dose Toxicity:** Inhalation-Rat TCLo • 550 ppm 8 Hour(s) 5 Day(s)-Intermittent; *Sense Organs and Special Senses:Ear*:**Change in acuity**; *Sense Organs and Special Senses:Ear*:**Changes in cochlear structure or function**; Inhalation-Rat TDLo • 200 ppm 13 Week(s)-Intermittent; *Sense Organs and Special Senses:Ear*:**Changes in cochlear structure or function**; **Mutagen:** Specific locus test • Intraperitoneal-Mouse • 754 µmol/L; Micronucleus test • Unreported Route-Hamster • Embryo (Somatic cell) • 25 mg/L; Sister chromatid exchange • Unreported Route-Human • Lymphocyte (Somatic cell) • 10 mmol/L; Mutation in Mammalian Somatic Cells • Unreported Route-Mouse • Lymphocyte (Somatic cell) • 80 mg/L; **Reproductive:** Inhalation-Rabbit TCLo • 1 g/m³ 24 Hour(s)(7-20D preg); *Reproductive Effects:Effects on Fertility*:**Abortion**; Inhalation-Rat TCLo • 1000 ppm (6-20D preg); *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; Inhalation-Rat TCLo • 96 ppm 7 Hour(s)(1-19D preg); *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; **Tumorigen / Carcinogen:** Inhalation-Rat TCLo • 750 ppm 6 Hour(s) 2 Year(s)-Intermittent; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Kidney, Ureter, and Bladder*:**Tumors**; Inhalation-Rat TCLo • 23400 mg/kg 104 Week(s)-Intermittent; *Tumorigenic*:**Equivocal tumorigenic agent by RTECS criteria**; *Kidney, Ureter, and Bladder*:**Kidney tumors**; *Reproductive Effects:Tumorigenic Effects*:**Testicular tumors**

GHS Properties	Classification
Acute toxicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Acute Toxicity - Oral 4 - ATEmix (Orl) = 1896 mg/kg
Skin corrosion/Irritation	**EU/CLP** • Skin Irritation 2 **OSHA HCS 2012** • Skin Irritation 2
Serious eye damage/Irritation	**EU/CLP** • Eye Irritation 2 **OSHA HCS 2012** • Eye Irritation 2
Skin sensitization	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Respiratory sensitization	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Aspiration Hazard	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Carcinogenicity	**EU/CLP** • Carcinogenicity 1B; May cause cancer **OSHA HCS 2012** • Carcinogenicity 1A

Germ Cell Mutagenicity	**EU/CLP** • Germ Cell Mutagenicity 2 **OSHA HCS 2012** • Germ Cell Mutagenicity 2
Toxicity for Reproduction	**EU/CLP** • Data lacking **OSHA HCS 2012** • Toxic to Reproduction 1B
STOT-SE	**EU/CLP** • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects **OSHA HCS 2012** • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
STOT-RE	**EU/CLP** • Data lacking **OSHA HCS 2012** • Specific Target Organ Toxicity Repeated Exposure 2

Potential Health Effects

Inhalation

Acute (Immediate)
- May affect the central nervous system. Symptoms may include dizziness, drowsiness, lethargy, coma and death.

Chronic (Delayed)
- Exposure to relatively low concentrations of ethylbenzene for several days to weeks resulted in potentially irreversible damage to the inner ear and hearing of animals.

Skin

Acute (Immediate)
- Causes skin irritation.

Chronic (Delayed)
- No data available

Eye

Acute (Immediate)
- Causes serious eye irritation.

Chronic (Delayed)
- No data available

Ingestion

Acute (Immediate)
- Harmful if swallowed.

Chronic (Delayed)
- No data available

Mutagenic Effects
- Repeated and prolonged exposure may cause mutagenic effects.

Carcinogenic Effects
- Repeated and prolonged exposure may cause cancer.

Carcinogenic Effects				
	CAS	**OSHA**	**IARC**	**NTP**
Ethylbenzene	100-41-4	Not Listed	Group 2B-Possible Carcinogen	Not Listed
Dichloromethane	75-09-2	Specifically Regulated Carcinogen	Group 2A-Probable Carcinogen	Reasonably Anticipated to be Human Carcinogen
Ethylene, trichloro-	79-01-6	Not Listed	Group 1-Carcinogenic	Reasonably Anticipated to be Human Carcinogen

Reproductive Effects
- Repeated and prolonged exposure may cause reproductive effects.

Key to abbreviations
LC = Lethal Concentration
LD = Lethal Dose
TC = Toxic Concentration
TD = Toxic Dose

Section 12 - Ecological Information

12.1 Toxicity

	CAS	
Vacseal® High Vacuum Leak Sealant, Aerosol, Clear	NDA	**Aquatic Toxicity-Fish:** 4 Day(s) LC50 16 mg/L Comments: Ethylene, trichloro- (79-01-6) 14 Day(s) NOEC 3.1 mg/L Comments: Ethylene, trichloro- (79-01-6) **Aquatic Toxicity-Algae and Other Aquatic Plant(s):** 3 Day(s) EC50 *Green Algae* 35.1-38.2

		mg/L Comments: Ethylene, trichloro- (79-01-6)

- Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

- Material data lacking.

12.3 Bioaccumulative potential

- Material data lacking.

12.4 Mobility in Soil

- Material data lacking.

12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN1950	Aerosols, non-flammable, (each not exceeding 1 L capacity)	2.2	III	NDA
IMO/IMDG	UN1950	Aerosols, non-flammable, (each not exceeding 1 L capacity)	2.2	III	NDA
IATA/ICAO	UN1950	Aerosols, non-flammable, (each not exceeding 1 L capacity)	2.2	III	NDA

14.6 Special precautions for user
- None specified.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
- Data lacking.

Section 15 - Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications
- Acute, Chronic, Fire

Inventory						
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**EU EINECS**	**EU ELNICS**	**TSCA**
Dichloromethane	75-09-2	Yes	No	Yes	No	Yes

Ethylbenzene	100-41-4	Yes	No	Yes	No	Yes
Ethylene, trichloro-	79-01-6	Yes	No	Yes	No	Yes
HFC-134a	811-97-2	Yes	No	Yes	No	Yes
Xylene	1330-20-7	Yes	No	Yes	No	Yes

Canada

Labor

Canada - WHMIS 1988 - Classifications of Substances

• HFC-134a	811-97-2	A
• Ethylbenzene	100-41-4	B2, D2A, D2B
• Xylene	1330-20-7	B2, D2A, D2B
• Dichloromethane	75-09-2	D1B, D2A, D2B
• Ethylene, trichloro-	79-01-6	D1B, D2A, D2B

Canada - WHMIS 1988 - Ingredient Disclosure List

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	0.1 %
• Xylene	1330-20-7	Not Listed
• Dichloromethane	75-09-2	0.1 %
• Ethylene, trichloro-	79-01-6	1 %

Environment

Canada - CEPA - Priority Substances List

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Priority Substance List 1 (substance not considered toxic)
• Dichloromethane	75-09-2	Priority Substance List 1 (substance considered toxic)
• Ethylene, trichloro-	79-01-6	Priority Substance List 1 (substance considered toxic)

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Dichloromethane	75-09-2	Not Listed
• Ethylene, trichloro-	79-01-6	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Dichloromethane	75-09-2	125 ppm STEL (See 29 CFR 1910.1052, 15 min); 12.5 ppm Action Level (See 29 CFR 1910.1052); 25 ppm TWA (See 29 CFR 1910.1052)
• Ethylene, trichloro-	79-01-6	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	(listed under Ethyl benzene)
• Xylene	1330-20-7	(isomers and mixtures)
• Dichloromethane	75-09-2	
• Ethylene, trichloro-	79-01-6	

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	1000 lb final RQ; 454 kg final RQ
• Xylene	1330-20-7	100 lb final RQ; 45.4 kg final RQ
• Dichloromethane	75-09-2	1000 lb final RQ; 454 kg final RQ
• Ethylene, trichloro-	79-01-6	100 lb final RQ; 45.4 kg final RQ

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Dichloromethane	75-09-2	Not Listed
• Ethylene, trichloro-	79-01-6	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Dichloromethane	75-09-2	Not Listed
• Ethylene, trichloro-	79-01-6	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Dichloromethane	75-09-2	Not Listed
• Ethylene, trichloro-	79-01-6	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	0.1 % de minimis concentration
• Xylene	1330-20-7	1.0 % de minimis concentration
• Dichloromethane	75-09-2	0.1 % de minimis concentration
• Ethylene, trichloro-	79-01-6	0.1 % de minimis concentration

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Dichloromethane	75-09-2	Not Listed

• Ethylene, trichloro-	79-01-6	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	carcinogen, 6/11/2004
• Xylene	1330-20-7	Not Listed
• Dichloromethane	75-09-2	carcinogen, 4/1/1988
• Ethylene, trichloro-	79-01-6	carcinogen, 4/1/1988

U.S. - California - Proposition 65 - Developmental Toxicity

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Dichloromethane	75-09-2	Not Listed
• Ethylene, trichloro-	79-01-6	developmental toxicity, 1/31/2014

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Dichloromethane	75-09-2	Not Listed
• Ethylene, trichloro-	79-01-6	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	54 µg/day NSRL (inhalation); 41 µg/day NSRL (oral)
• Xylene	1330-20-7	Not Listed
• Dichloromethane	75-09-2	200 µg/day NSRL (inhalation); 50 µg/day NSRL
• Ethylene, trichloro-	79-01-6	14 µg/day NSRL (oral); 50 µg/day NSRL (inhalation)

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Dichloromethane	75-09-2	Not Listed
• Ethylene, trichloro-	79-01-6	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• HFC-134a	811-97-2	Not Listed
• Ethylbenzene	100-41-4	Not Listed
• Xylene	1330-20-7	Not Listed
• Dichloromethane	75-09-2	Not Listed
• Ethylene, trichloro-	79-01-6	male reproductive toxicity, 1/31/14

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

15.3 Other Information

- WARNING: This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16 - Other Information

Relevant Phrases (code & full text)

- H280 - Contains gas under pressure; may explode if heated
  H304 - May be fatal if swallowed and enters airways
  H312 - Harmful in contact with skin
  H332 - Harmful if inhaled
  H351 - Suspected of causing cancer.
  H373 - May cause damage to organs through prolonged or repeated exposure.

Revision Date
- 01-August-2017

Preparation Date
- 01-September-2014

Disclaimer/Statement of Liability
- The information stated in this Safety Data Sheet is designed only as guidance for safe handling, use, storage, transportation and disposal. This Product should be used only in the context of it's intended manner of use, and include proper assessment of the appropriateness by the end user. The information relates only to the specific material designated and may not be valid when used in combination with any other materials or if this product has been re-packaged, renamed or relabeled. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of it's publications or revisions.

Key to abbreviations
NDA = No Data Available