Section 1: Identification

Chemical Name:    Silicone resin solution of chlorinated and non-chlorinated organic solvents
Chemical family:  Silicone resin mixture

Emergency phone numbers:
+1-720-271-2719  or  +1-303-647-8160

Product or Trade Name:  Vacseal® Vacuum Leak Sealant, Aerosol, Clear
CAS #’s:    79-01-6; 75-09-2; 811-97-2; 1330-20-7; 100-41-4

Chemical Formula:  mixture

Emergency Overview

OSHA Hazards
Carcinogen, Irritant, Target Organ Effect, Mutagen

Target Organs
Liver, Kidney, Pancreas, Blood, Central nervous system, Heart, Lungs, Eyes

GHS Classification
Acute toxicity, Oral (Category 5)
Acute toxicity, Dermal (Category 5)
Skin irritation (Category 2)
Serious eye damage (Category 1)
Germ cell mutagenicity (Category 2)
Carcinogenicity (Category 1B)
Specific organ toxicity – single exposure (Category 2)
Specific organ toxicity – repeated exposure (Category 2)
Acute aquatic toxicity (Category 3)
Chronic aquatic toxicity (category 3)

GHS Label elements, including precautionary statements
Pictogram
Signal word: Danger

Hazard statement(s):
- H303 + H313: May be harmful if swallowed or if in contact with skin.
- H315: Causes skin irritation.
- H318: Causes serious eye damage. H335:
  May cause respiratory irritation. H336:
  May cause drowsiness or dizziness. H350:
  May cause cancer.
- H371: May cause damage to organs.
- H412: Harmful to aquatic life with long lasting effects.

Precautionary statement(s):
- P260: Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
- P273: Avoid release to the environment.
- P281: Wear protective gloves/ eye protection/ face protection.
- 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.

Hazardous Material Information System USA
- Health............................ 2
- Fire Hazard................... 1
- Reactivity..................... 1
- Personal Protection....... 

NFPA Rating (estimated)
- Health............................ 2
- Flammability.................. 1
- Reactivity..................... 1

Section 2: Composition

Chemical characterization: Silicone Solution

Physical Form: Liquid – Resin solids are 14% by weight.

Color: Colorless to pale yellow

Use: Sealing leaks in high and ultra high vacuum systems.

Hazardous Ingredients:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>EC Number</th>
<th>% (w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroethylene</td>
<td>79-01-6</td>
<td>201-167-4</td>
<td>30 – 60</td>
</tr>
<tr>
<td>Dichloromethane</td>
<td>75-09-2</td>
<td>20-838-9</td>
<td>15 – 30</td>
</tr>
<tr>
<td>1,1,1,2-Tetrafluoroethane</td>
<td>811-97-2</td>
<td>212-377-0</td>
<td>10 – 20</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>215-535-7</td>
<td>5 -10</td>
</tr>
</tbody>
</table>
Section 3: Hazard Identification

Overall Hazard Classification: Combustible, Irritant, Harmful

Hazard Information:
- Health Rating: 2 – Moderate (Poison)
- Flammability Rating: 1 – Slight
- Reactivity Rating: 1 – Slight
- Contact Rating: 3 – Severe

Lab Protective Equipment: Goggles & Shield, Lab Coat, Vent Hood, Proper Gloves

Storage Color Code: Blue (Health)

Routes of Exposure: Skin Contact and Accidental Ingestion

Possible Health Effects:

Acute
- **Eyes:** Vapor may cause eye irritation. Direct contact may cause severe irritation.
- **Skin:** May cause moderate irritation.
- **Inhalation:** Vapor may irritate nose and throat. Overexposure by inhalation may cause drowsiness, dizziness, confusion, or loss of coordination.

Chronic
- **Skin:** Overexposure may injure internally if absorbed. Prolonged exposure may cause serious irritation.
- **Inhalation:** Overexposure by inhalation may injure the following organs: blood, lungs, liver, kidneys, nervous system
- **Ingestion:** Repeated ingestion or swallowing large amounts may injure internally.

Signs and symptoms of overexposure:
- Vapor exposure may cause drowsiness and irritate throat. Overexposure may cause dizziness, confusion or loss of coordination.

Section 4: First Aid Measures

Eyes: Flush with water 15 minutes. Get medical attention.

Skin: Wipe off and wash thoroughly with soap and water or waterless cleanser. Get medical attention if irritation develops or persists.

Inhalation: Remove to fresh air. Get medical attention if ill effects develop or persist.

Ingestion: Get medical attention immediately. Do not induce vomiting.
Section 5: Fire Fighting Measures

**Flammability:** Not Flammable in air at temperatures up to 100°C. However, it can become combustible with elevated temperature and/or pressure in the presence of an ignition source.

**Flash Point:** Not determined.

**Autoignition Temperature:** Not determined.

**Lower Flammability Limit:** Not determined.

**Upper Flammability Limit:** Not determined.

**Hazardous Properties:** Cylinders may rupture, explode or become a projectile under fire conditions. Exposure to strong oxidizing agents can cause fire or explosion. Reacts violently with oxidizing agents. Can cause fire when in contact with open flame or excessive heat. Toxic vapor. Irritating to eyes, mucous membranes or skin, and may cause burning. Narcotic, or its vapor is narcotic.

**Extinguishing Media:**
Dry Chemical, water fog, foam, carbon dioxide, water.

**Special Firefighting Procedure:**
Wear self-contained breathing apparatus due to thermal decomposition of products. Protective clothing should be worn.

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

**Unsuitable Extinguishing Media:** None established.

Section 6: Accidental Release Measures

**Personal Precautions:**
Avoid skin and eye contact; avoid breathing vapor, mist, dust or fumes; keep container closed. Do not take internally.

**Environmental Precautions:**
Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.

**Spill Response:**
Remove all sources of ignition. Wear protective equipment. Use absorbent material to collect and contain for salvage or disposal. Use chemical splash goggles and gloves. Use respiratory protection unless exhaust ventilation is adequate or air sample data exposures are within TLV and PEL guidelines. Remove contaminated clothing and shoes as soon as practical and clean before reuse.

Section 7: Handling and Storage

**Handling Precautions:**
Use with adequate ventilation. Traces of benzene (carcinogen) may form if heated in air above 149°C. Provide ventilation to control vapor exposure within inhalation guidelines when handling at elevated temperatures. Avoid skin and eye contact. Avoid breathing vapor. Exercise good industrial hygiene.
practice. Wash after handling, especially before eating, drinking, or smoking.

Storage Conditions:
Keep container closed and away from heat. Do not store near flame or other source of ignition.

Section 8: Exposure Controls and Personal Protection

Industrial Hygiene Standards:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS No.</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroethylene</td>
<td>79-01-6</td>
<td>OSHA PEL 100 ppm 8 Hr (TWA) ACGIH TLV 50 ppm 8 Hr (TWA) 100 ppm (STEL)</td>
</tr>
<tr>
<td>Dichloromethane</td>
<td>75-09-2</td>
<td>OSHA PEL 25 ppm 8 Hr (TWA) ACGIH TLV 50 ppm 8 Hr (TWA) 125 ppm (STEL)</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>OSHA PEL 100 ppm 8 Hr (TWA) ACGIH TLV 100 ppm 8 Hr (TWA) 150 ppm (STEL)</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>OSHA PEL 100 ppm 8 Hr (TWA) ACGIH TLV 100 ppm 8 Hr (TWA) 125 ppm (STEL)</td>
</tr>
</tbody>
</table>

Engineering Controls:
Local ventilation – recommended
General ventilation – recommended

Personal Protective Equipment:
Respiratory:
Use appropriate respiratory (Organic Vapor/ Dust/ Mist) protection unless adequate local exhaust ventilation is provided or air sampling data show exposure is within exposure guidelines.

Eye: Use Chemical Splash Goggles.
Skin: Use protective clothing, chemical gloves, and long sleeves.

Hygiene Measures:
Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse.

Section 9: Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Form</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless to pale yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Solvent odor</td>
</tr>
<tr>
<td>pH</td>
<td>Not determined</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Not determined</td>
</tr>
<tr>
<td>Boiling point</td>
<td>&gt; 100° C</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not determined</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>Not determined</td>
</tr>
</tbody>
</table>
Explosive properties: No
Oxidizing properties: No
Vapor pressure @ 25°C: Not determined
Specific gravity: 1.010
Octanol/water partition coeff.: Not determined
Vapor density (air=1): Not determined
Viscosity: 105 cSt
Molecular Weight: Not determined

**Section 10: Stability and Reactivity**

**Stability:** Stable

**Reactivity:**
- Conditions to avoid: None
- Materials to avoid: Oxidizing material can cause a reaction.
- Hazardous decomposition: Carbon oxides and traces of incompletely burned carbon compounds.
- Hazardous polymerization: Does not occur.

**Section 11: Toxicological Information**

Possible health effects: Refer to Section 3.

**Sensitizing Effects:** None known

**Mutagenic Effects:**
- Note that CAS# 79-01-6 Trichloroethylene has possible germ cell mutagenicity.

**Reproductive Effects:** None known

**Carcinogenic Effects:**
- Note that components CAS# 79-01-6 Trichloroethylene, CAS# 75-09-2 Dichloromethane, and CAS# 1330-20-7 Xylene have possible carcinogenicity.

**Other Health Hazard:** No known applicable information.

**Section 12: Ecological Information**

**Environmental Fate and Distribution:**
Organic solvents may evaporate into the atmosphere, where they degrade. Siloxanes are removed from water by sedimentation or binding to sewage sludge. In soil siloxanes are degraded.

**Environmental Effects:**
No adverse effects on aquatic organisms are predicted.
Bioaccumulation: Potential to bioaccumulate.

**Fate and effects in Waste Water Treatment Plants:**
No adverse effects on bacteria are predicted. The siloxanes in this product to not contribute to the BOD. The organic solvents in the product are poorly biodegradable.

**Section 13: Disposal Considerations**
Dispose of product and package in accordance with all local, state and federal regulations.
Section 14: Transport Information

Proper Shipping Name: Silicon resin solution
DOT Hazard Class: 2.2
UN / NA ID: 1950
Packing Group: III
Labels: Aerosol, Non Flammable N. O. S.
Marine Pollutant: Probably not because of very low solubility in water of the final cured resin.
Other solvents evaporate quickly.
DOT Status: Regulated

Section 15: Regulatory Information

Chemical Inventories:
TSCA: All chemical substances in this material are included on or exempted from listing on the TSCA inventory.
TSCA 12 (b): No
SARA: 311/312: Acute, yes Chronic, yes Fire, no Pressure, no Reactivity, no
California Prop. 65:
This product contains an ingredient known by the State of California to cause cancer or reproductive damage:
Trichloroethylene 79-01-6 OSHA PEL 100 ppm 8 Hr (TWA) ACGIH TLV 50 ppm 8 Hr (TWA) 100 ppm (STEL)

Section 16: Other Information

General Disclaimer:
The information provided in this Safety Data Sheet is designed only as guidance for safe handling, use, storage, transportation and disposal. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or if this product has been repackaged, renamed or relabeled. The information provided in this Safety Data Sheet is correct to the best of our knowledge and information at the date of publication.