

## DESCRIPTIVE FEATURES OF PARKER'S SUPER O-LUBE

02/08/2010

**Description:** Clear Dimethyl Siloxane Polymer

**Physical Data:**

Viscosity @ 77° F	100,000 centistokes
Flash Point:	Open Cup > 610° F
Pour Point:	-33° F
Specific Gravity @ 77° F:	0.98
Viscosity Temperature Coefficients:	0.61
Coefficient of Expansion (cc/cc/°c):	0.00096
Refractive Index @ 77° F:	1.4037
Volatility (% wt. loss .24 hours @ 302° F):	< 2%
Boiling Point:	>300° F
Vapor Pressure:	< 5 mmHg
Solubility in Water	< 0.1%

**Solvents:** Amyl acetate, benzene, carbon tetrachloride, chloroethene NU, cyclohexane, diesel fuel, ethylene dichloride, ethyl ether, 2-ethyl hexanol, gasoline, hexyl ether, methylene chloride, methyl ether, mineral seal oil, naphtha VM+P, perchloroethylene, stoddard solvent, toluene, trichloroethylene, turpentine, xylene, JP-4 jet fuel, kerosene.

**Non-Solvents:** Cyclohexanol, dimethylphthalate, dodecanol, Dowanol DE, Dowanol EE, ethylene glycol, methanol, paraffin oil, propylene glycol, water.

**Please note: solvents and non-solvents are listed here for the purposes of application compatibility and clean-up. These chemicals are NOT present in Parker Super-O-Lube.**

## PARKER SUPER O-LUBE MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing,  
Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

02/08/2010

### Section I

<b>Manufacturer's Name</b>	Parker Hannifin Corp., O-Ring Division
<b>Emergency Telephone No.</b>	(859) 269-2351
<b>Address</b>	2360 Palumbo Drive, PO Box 11751, Lexington, KY 40512
<b>Trade Name and Synonyms</b>	Super O-Lube
<b>Chemical Family</b>	Clear Polysiloxane Polymer
<b>Generic Description:</b>	Silicone
<b>Physical Form:</b>	Viscous Liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Characteristic odor
<b>NFPA Profile:</b>	Health: 0 Flammability: 1 Instability/Reactivity 0

### Section II - Hazards Identification

None present. This is not a hazardous material as defined in the OSHA Hazard Communication Standard.

All ingredients are listed on the TSCA Chemical Substances Inventory.

### Section III – Hazards Identification

#### Acute Effects

<b>Eye:</b>	Direct contact may cause temporary redness and discomfort.
<b>Skin:</b>	No significant irritation expected from a single short-term exposure.
<b>Inhalation:</b>	No significant effects expected from a single short-term exposure.
<b>Oral:</b>	Low ingestion hazard in normal use.

#### Prolonged/Repeated Exposure Effects

<b>Skin:</b>	No known applicable information.
<b>Inhalation:</b>	No known applicable information.
<b>Oral:</b>	No known applicable information.
<b>Signs and Symptoms of Overexposure:</b>	No known applicable information.

#### Medical Conditions Aggravated by Exposure:

No known applicable information.

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar composition, component data and/or expert review of the product. Please refer to Section 11 for the detailed toxicology information.

### Section IV – First Aid Measures

<b>Eye:</b>	Immediately flush with water.
<b>Skin:</b>	No first aid should be needed.
<b>Inhalation:</b>	No first aid should be needed.
<b>Oral:</b>	No first aid should be needed.
<b>Comments:</b>	Treat according to person's condition and specifics of exposure.

### Section V – Fire Fighting Measures

<b>Flash Point:</b>	610 °F / 321.1 °C (Closed Cup) > 680 °F / > 360 °C (Cleveland Open Cup)
<b>Autoignition Temperature:</b>	Not determined.
<b>Flammability Limits in Air:</b>	Not determined.
<b>Extinguishing Media:</b>	On large fires use dry chemical, foam or water spray. On small fires use carbon dioxide (CO <sub>2</sub> ), dry chemical or water spray. Water can be used to cool fire exposed containers.
<b>Fire Fighting Measures:</b>	Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.
<b>Unusual Fire Hazards:</b>	None.
<b>Hazardous Decomposition Products:</b>	Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide. Formaldehyde.

### Section VI – Accidental Release Measures

<b>Containment/Clean Up:</b>	Determine whether to evacuate or isolate the area according to your local emergency plan. Observe all personal protection equipment recommendations described in Sections 5 and 8. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbent or cleaning materials appropriately, since spontaneous heating may occur. Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.
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Note: See section 8 for Personal Protective Equipment for Spills. Call (989) 496-5900, if additional information is required.

## Section VII – Handling and Storage

Use with adequate ventilation. Avoid eye contact. Use reasonable care and store away from oxidizing materials.

## Section VIII – Exposure Controls / Personal Protection

**Component Exposure Limits:** There are no components with workplace exposure limits.  
**Engineering Controls:** Local Ventilation: None Needed  
General Ventilation: Recommended

**Personal Protective Equipment for Routine Handling:**  
Eyes: Use proper protection – safety glasses as a minimum.  
Skin: Washing at mealtime and end of shift is adequate.  
Suitable Gloves: No special protection needed.  
Inhalation: No respiratory protection should be needed.  
Suitable Respirator: None should be needed.

**Personal Protective Equipment for Spills:** Eyes: Use proper protection – safety glasses as a minimum.  
Skin: Washing at mealtime and end of shift is adequate.  
Inhalation/Suitable Respirator: No respirator protection should be needed.  
Precautionary Measures: Avoid eye contact. Use reasonable care.

**Comments:** When heated to temperatures above 150 degrees C in the presence of air, product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard, a known skin and respiratory sensitizer, and an irritant to the eyes, nose, throat, skin, and digestive system. Safe handling conditions may be maintained by keeping vapor concentrations within the OSHA Permissible Exposure Limit for formaldehyde.

## Section IX – Physical and Chemical Properties

**Physical Form:** Viscous Liquid  
**Color:** Colorless  
**Odor:** Characteristic Odor  
**Specific Gravity @ 25°C:** 0.97  
**Viscosity:** 100000 cSt  
  
**Freezing/Melting Point:** Not determined.  
**Boiling Point:** > 65°C  
**Vapor Pressure @ 25°C:** Not determined.  
**Vapor Density:** Not determined.  
**Solubility in Water:** Not determined.  
**pH:** Not determined.  
**Approx. Volatile Content:** < .1g per gallon

**Note:** The above information is not intended for use in preparing product specifications.

## Section X – Stability and Reactivity

<b>Chemical Stability:</b>	Stable.
<b>Hazardous Polymerization:</b>	Hazardous polymerization will not occur.
<b>Conditions to Avoid:</b>	None.
<b>Materials to Avoid:</b>	Oxidizing material can cause a reaction.

## Section XI – Toxicological Information

<b>Special Hazard Information on Components:</b>	No known applicable information.
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## Section XII – Ecological Information

### Environmental Fate and Distribution:

<b>Air:</b>	This product is a high molecular weight liquid polymer which has a very low vapor pressure (<1 mm Hg). As a result it is unlikely to become an atmospheric contaminant unless generated as an aerosol.
<b>Water:</b>	This product has very low water solubility (< 100 ppb). As it has a specific gravity of < 1, if discharged to water, it will initially form a surface film. As the product is non-volatile and has a high binding affinity for particulate matter, it will absorb to particulates and sediment out.
<b>Soil:</b>	If discharged to surface water, this product will bind to sediment. If discharged in effluent to a waste water treatment plant, the product is removed from the aqueous phase by binding to sewage sludge. If the sewage sludge is subsequently spread on soil, the silicone product is expected to degrade.
<b>Degradation:</b>	This product, polydimethylsiloxane, degrades in soil abiotically to form smaller molecules. These in turn are either biodegraded in soil or volatilized into the air where they are broken down in the presence of sunlight. Under appropriate conditions, the ultimate degradation products are inorganic silica, carbon dioxide and water vapor. Due to the very low water solubility of this product, standard OECD protocols for ready and inherent biodegradability are not suitable for measuring the biodegradability of this product. The product is removed >80% during the sewage treatment process.

### Environmental Effects:

<b>Toxicity to Water Organisms:</b>	Based on analogy to similar materials this product is expected to exhibit low toxicity to aquatic organisms.
<b>Toxicity to Soil Organisms:</b>	Experiments show that when sewage sludge containing polydimethylsiloxane is added to soil, it has no effect on soil micro-

organisms, earthworms or subsequent crops grown in the soil.

**Bioaccumulation:**

This product is a liquid and is a high molecular weight polymer. Due to its physical size it is unable to pass through, or be absorbed by biological membranes. This has been confirmed by testing or analogy with similar products.

**Fate and Effects in Waste Water Treatment Plants**

This product or similar products has been shown to be non-toxic to sewage sludge bacteria.

Ecotoxicity Classification Criteria

Hazard Parameters (LC50 or EC50) Acute	High	Medium	Low
Aquatic Toxicity (mg/L)	<=1	>1 and <=100	>100
Acute Terrestrial Toxicity	<=100	>100 and <= 200	>2000

This table is adapted from "Environmental Toxicology and Risk Assessment", ASTM STP 1179, p.34, 1993.

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material.

**Section XIII – Disposal Considerations**

**RCRA Hazard Class (40 CFR 261)**

When a decision is made to discard this material, as received, is it classified as a hazardous waste? No. State or local laws may impose additional regulatory requirements regarding disposal.

Call (989) 496-6315, if additional information is required.

**Section XIV – Transport Information**

**DOT Road Shipment Information (49 CFR 172.101):**

Not subject to DOT.

**Ocean Shipment (IMDG):**

Not subject to IMDG code.

**Air Shipment (IATA):**

Not subject to IATA regulations.

**Section XV – Regulatory Information**

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910. 1200.

**TSCA Status:**

All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

**EPA SARA Title III Chemical Listings:**

**Section 302 Extremely Hazardous Substances (40 CFR 355):** None.

**Section 304 CERCLA Hazardous Substances (40 CFR 302):** None.

**Section 311/312 Hazard Class (40 CFR 370):**

Acute: No.  
Chronic: No.  
Fire: No.  
Pressure: No.  
Reactive: No.

**Section 313 Toxic Chemicals (40 CFR 372):** None present or none present in regulated quantities.

**Supplemental State Compliance Information**

**California**

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm: None known.

**Massachusetts**

No ingredient regulated by MA Right-to-Know Law present.

**New Jersey**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
63148-62-9	>60.0	Polydimethylsiloxane

**Pennsylvania**

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
63148-62-9	>60.0	Polydimethylsiloxane

**Section XVI – Other Information**

Prepared by: Parker Hannifin Seals: O-Ring Division

These data are offered in good faith as typical values and not as product specification. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

Recommendations on application design and material selection are based on available technical data and are offered as suggestions only. Each user should make his own tests to determine the suitability for his own particular use. Parker offers no express or implied warranties concerning the form, fit, or function of a product in any application.