1. Substance/Product Identification

Product Name: 112B Biodegradable Hydraulic Fluid ISO 32, 46, 68
Company/Address: 102 Barton St
Saint Louis, Missouri, 63104 USA
Synonyms: None
Preparation/Revision Date: June 6, 2013
Product Use/Type: Hydraulic fluid
Emergency Phone Number: +1 314 865-4105 (24-hour response number)
+ 1 314 865-4100 (Business hours 8:30AM-5:00PM)
1-800-325-9962 (US & Canada)
Website: www.schaefferoil.com
MSDS Number: 112B Version 1.9

2. Hazards Identification

Appearance: Yellow to Amber color
Odor: Mild vegetable odor
Principal Hazards: Eye, skin and upper respiratory tract irritation

Hazardous Materials Information System (U.S.A)  
Health: 1  
Fire: 1  
Reactivity: 0:

National Fire Protection Agency System (U.S.A.)  
Health: 1  
Fire: 1  
Reactivity: 0

See Section 11 for complete health hazard information
Product Name: 112B  Biodegradable Hydraulic Fluid ISO 32, 46, 68

3. Composition and Information on Ingredients

Hazardous Ingredients

<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS No.</th>
<th>EU Number</th>
<th>Percentage (by wt.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture of Vegetable oils</td>
<td>120962-03-0</td>
<td>232-2704</td>
<td>55-70</td>
</tr>
<tr>
<td></td>
<td>8001-22-7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trimethylolpropane trioleate</td>
<td>57675-44-2</td>
<td>260-895-0</td>
<td>25-30</td>
</tr>
<tr>
<td>2-6-di-tert-butyl phenol</td>
<td>128-39-2</td>
<td>204-884-0</td>
<td>&lt;0.8</td>
</tr>
</tbody>
</table>

4. First Aid Measures

**Ingestion:** Do not induce vomiting. Give one or two glasses of water to drink. Never give anything by mouth to an unconscious person. Seek medical attention

**Eyes:** Immediately flush with clean water for 15 minutes. If irritation, redness or itching persists seek medical attention.

**Inhalation:** Remove victim to fresh air. If breathing is difficult administer oxygen by trained personnel. If upper respiratory tract irritation, headache, nausea, or drowsiness occurs if upper respiratory tract irritation, headache, nausea, or drowsiness occurs remove to fresh air. Get immediate medical attention if breathing becomes difficult or symptoms persist.

**Skin:** Remove contaminated clothing and launder before reuse. Wash skin with large amounts of soap and water. Seek medical attention if irritation develops

**Additional Information:** None

5. Fire Fighting Measures:

**Flash Point:** 397° to 466°F (203° to 244°C) Cleveland Open Cup ASTM D-92

**Extinguishing Media:** Dry chemical foam, water-fog, carbon dioxide

**Firefighting Procedures:** As in any fire wear a self contained breathing apparatus pressure demand, MSHA/NIOSH (Approved or Equivalent) and full protective gear

**Unusual Fire & Explosion:** Dense black smoke

**Hazards:** None
Product Name: 112B Biodegradable Hydraulic Fluid ISO 32, 46, 68

6. Accidental Release Measures

Spill Procedures and Clean up methods: Use absorbent materials to contain spill. Collect used absorbent material and discard as dictated by Federal, State and local laws and regulations. Keep out of sewers and watercourses

Personal Precautions: Wear appropriate personal protective equipment when cleaning up a spill

Environmental Precautions: Though this product is biodegradable, all oil spills even those of vegetable oil base products must be reported to the National Response Center (U.S. Coast Guard) if they are spilled into rivers, creeks, streams or other natural waterways or courses. The Coast Guard Toll Free No. 800-424-8802

7. Handling & Storage

Handling: Avoid all contact of product with eyes and skin. Wash thoroughly after handling and before eating, smoking or using toilet facilities. Do not swallow product. Do not inhale vapors or mists. Do not eat, drink or smoke in work areas.

Storage: Do not store product at elevated temperatures. Store in a cool dry place that has adequate ventilation. Do not store near food or feed products. Keep containers closed when not in use. Keep away from direct sunlight.

8. Exposure Controls and Personal Protection

Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>OSHA TWA</th>
<th>OSHA STEL</th>
<th>ACGIH TWA</th>
<th>ACGIH STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture of Vegetable oils</td>
<td>15 mg/m³</td>
<td></td>
<td>10 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(l)</td>
<td></td>
<td>(l)</td>
<td></td>
</tr>
<tr>
<td>Trimethylolpropane trioletae</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>2-6-di-tert-butyl phenol</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
</tbody>
</table>

(s)-Skin exposure
(p) proposed limit
(c ) – Ceiling limit
(l) Recommended exposure limit
(u) supplier limit
(N/E) – not established
Product Name: 112B Biodegradable Hydraulic Fluid ISO 32, 46, 68

Other Exposure Limits
Engineering Controls: Good general ventilation should be used. If applicable use process enclosures, local exhaust ventilation and other engineering controls to maintain airborne levels below recommended exposure limits.

Personal Protective Equipment
Gloves: Impervious oil resistant gloves such as Neoprene, Nitrile rubber
Protective Clothing: Apron and long sleeves recommended
Eye Protection: Chemical goggles or safety goggles
Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits where applicable or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. If a respirator must be used use a air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter cartridge or canister. Contact health and safety professional for specific information.

9. Physical and Chemical Properties
Flash Point: 397° to 466°F (203° to 244°C) Cleveland Open Cup ASTM D-92
Specific Gravity: 0.9048 to 0.9259
Upper Flammable Limit (UEL): Not Determined
Lower Flammable Limit (LEL): Not Determined
Vapor Pressure: Not determined
Vapor Density (air =1): Heavier than air
Percent Volatile:
Evaporation Rate:
pH: Not applicable
Boiling Point: >392°F (>200°C)
Melting Point: Not applicable
Appearance: Yellow to amber color
Odor: Mild vegetable odor
Solubility in Water: Negligible

The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise specified
Product Name: 112B Biodegradable Hydraulic Fluid ISO 32, 46, 68

10. Stability and Reactivity

**Stability:** Stable under normal conditions
**Materials to Avoid:** Strong oxidizing agents
**Polymerization:** Will not occur
**Thermal Decomposition:** Carbon dioxide and carbon monoxide. Byproducts of incomplete combustion
**Conditions to Avoid:** Avoid breathing mists and vapors

11. Toxicological Information:

**Routes of Exposure:** Skin, eyes, ingestion and inhalation
**Target Organs:** Skin, eyes, upper respiratory tract

**Acute Exposure**

**Ingestion:** Nausea, diarrhea
**Eye Contact:** May cause irritation and redness to eyes
**Skin Contact:** Prolonged and repeated contact may cause irritation, redness and dryness to skin
**Inhalation:** Heating can generate vapors and mists that can cause nausea, dizziness and other upper respiratory irritation if inhaled.
**Dermal Sensitization:** Product is not considered to be a dermal sensitizer
**Inhalation Sensitization:** Product is not considered to be an inhalation sensitizer
**Carcinogenicity:** Product does not contain any components listed by ACGIH, IRAC, NIOSH, NTP or OSHA

**Additional Toxicological Information:** No data available to indicate the product or any of its components are present at greater than 0.1% are mutagenic, genotoxic or teatogenic.

**Acute toxicity**
- Trimethylolpropane trioleate
  - Oral LD50 >2000 mg/kg body weight
- 2,6-di-tert-butylphenol
  - Oral LD50 >5,000 mg/kg (rat)
  - Dermal LD50 10,000 mg/kg (rabbit)
Product Name: 112B Biodegradable Hydraulic Fluid ISO 32, 46, 68

12. Environmental and Ecological Information

Ecotoxicity

Not expected to be harmful to aquatic organisms.
EC50 96 hours >10,000 ppm (Fathead Minnow)
EC50 48 hours >10,000 ppm (Daphina Magna)
EC50 Sludge Respiration Inhibition >10,000 ppm (bacteria)

Depending on the contamination and/or degradation levels, small amounts of spilled or leaked EcoShield™ Biodegradable EP Gear Oil will not adversely affect ground water or the environment. For small spills on the ground uncontaminated product will be readily biodegraded by naturally occurring soil organisms when exposed to air. Nonetheless, spillage of EcoShield™ Biodegradable EP Gear Oil should be handled similarly to currently accepted methods for conventional mineral oil spills.

Environmental Fate

Biodegradation: At least >60% to 90% of this product is biodegradable by the Modified OECD Sturm 301B Method
Bioaccumulation: This product will not bioaccumulate
Water Class Hazard (Germany): WK-1 according to appendix 4 VwVwS dated 27.7.2005

13. Disposal Considerations

Waste Handling and Disposal: This product in its neat state when discarded or disposed of is not a hazardous waste according to Federal Regulations 40CFR 261.4 (b)(4). Dispose of product in accordance with all applicable Federal, State and local laws and regulations. Do not re-use empty containers

14. Transport Information

US DOT Classification Non-Bulk: Not regulated
US DOT Classification Bulk: Not regulated
IMDG Classification: Not regulated
IATA/ICAO Classification: Not regulated
Product Name: 112B Biodegradable Hydraulic Oil ISO 32, 46, 68

15. Regulatory Information

Hazard Symbols

Xi Irritant

US Regulations

TSCA Inventory: All of the components in this material are on the US TSCA Inventory or are exempt.
State of California Proposition 65: This product does not contain any of the chemicals that are listed on the State of California’s Proposition 65 List as potential cancer causing agents or reproductive toxins

US EPA SARA Title III and CERCLA Listings and Reportable Quantities

US EPA Section 311/313 Classifications
This product does not contain greater than 1% of any chemical substance listed under the SARA Title III Section 313, CERCLA’s 302/304 and 102(a) Lists

Section 311/312 (40CFR 370)
Acute (Immediate)  Chronic (Delayed)  Fire  Reactive  Pressure Generating
X

US EPA Section 313 Chemicals
Not applicable

US Tariff Heading Number: 3403.19.0000
Schedule B Number: 3403.19.0000
Product Name: 112B Biodegradable Hydraulic Fluid ISO 32, 46, 68

Other Regulations:

Canada: All of the ingredients of this product are in compliance with the Canadian Environmental Protection Act and are present on the Domestic Substance List

Canadian WHMIS Classifications and Symbols: This product is not considered to be a WHMIS controlled product

EEC: All components are in compliance with the EC Seventh Amendment Directive 92/32/EEC

16. Other Information

For additional information call +1 314-865-4100 (outside the US and Canada) or 1-800-325-9962 inside the United States and Canada.

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