Material Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product name  SKYDROL™ 500B-4
Product code  80002
Recommended Use  Aviation
Hydraulic fluids:

Manufacturer  Solutia Inc.
A subsidiary of Eastman Chemical Company
575 Maryville Centre Drive
St. Louis, Missouri 63141 U.S.A.
Telephone: +1-314-674-6661

Emergency Phone Number  Chemtrec: 1-800-424-9300 - Direct Dial:1-703-527-3887

SECTION 2: Hazards identification

Signal word - Warning

EMERGENCY OVERVIEW
May cause slight irritation
Limited evidence of a carcinogenic effect
Contains material which may cause urinary bladder damage based on animal data

Appearance  Clear Oily  Physical State  Liquid  Odor  Odorless

Potential health effects

Acute toxicity

Eyes  May cause slight irritation. Contact with the eyes may be very painful but does not cause damage.

Skin  Substance may cause slight skin irritation.

Inhalation  Not expected to produce significant adverse health effects when recommended use instructions are followed.

Ingestion  May be harmful if swallowed.

Chronic effects  Produced effects on body weight, serum enzymes and/or organ weights in repeat dose studies.

Environmental Hazard  Harmful to aquatic life with long lasting effects. See Section 12 for additional Ecological Information.

SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, dibutyl phenyl ester</td>
<td>2528-36-1</td>
<td>40 - 70</td>
</tr>
<tr>
<td>Tributyl phosphate</td>
<td>126-73-8</td>
<td>19 - 20</td>
</tr>
<tr>
<td>Phosphoric acid, butyl diphenyl ester</td>
<td>2752-95-6</td>
<td>10 - 30</td>
</tr>
<tr>
<td>2-ethylhexyl</td>
<td></td>
<td>&lt; 10</td>
</tr>
<tr>
<td>7-oxabicyclo[4.1.0]heptane-3-carboxylate</td>
<td>62256-00-2</td>
<td></td>
</tr>
</tbody>
</table>

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SECTION 4: First aid measures

General advice
When symptoms persist or in all cases of doubt seek medical advice. If unconscious, place in recovery position and get medical attention immediately. Show this material safety data sheet to the doctor in attendance.

Eye contact
Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention immediately if symptoms occur.

Skin contact
Wash off immediately with soap and plenty of water. Remove contaminated clothing and shoes. In the case of skin irritation or allergic reactions see a physician. Wash contaminated clothing before reuse. Discard contaminated shoes.

Inhalation
Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Call a physician. Keep victim warm and quiet. Loosen tight clothing such as a collar, tie, belt or waistband. Maintain an open airway. If unconscious, place in recovery position and get medical attention immediately. Persons who have inhaled vapors or smoke fumes have to be put under medical observation for at least 48 hours, due to the delayed appearance of poisoning.

Ingestion
If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Keep victim warm and quiet. Loosen tight clothing such as a collar, tie, belt or waistband. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Never give anything by mouth to an unconscious person. Do NOT induce vomiting unless directed to do so by a physician. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Maintain an open airway. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.

Notes to physician
Treat symptomatically. Persons who have inhaled vapors or smoke fumes have to be put under medical observation for at least 48 hours, due to the delayed appearance of poisoning.

SECTION 5: Firefighting measures

Flash point
Method
> 177 °C
Cleveland Open Cup

Suitable extinguishing media
Water spray, Foam, Dry powder, Carbon dioxide (CO₂)

Hazardous combustion products
Carbon monoxide, Phosphorus oxides

Explosion Data
Sensitivity to Mechanical Impact
None

Sensitivity to static discharge
None

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

SECTION 6: Accidental release measures

Personal precautions
No action shall be taken involving any personal risk or without suitable training. Large Spill: Approach release from upwind. Do not touch or walk through spilled material. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Wear personal protective equipment. See also section 8.
**Environmental precautions**
Prevent further leakage or spillage if safe to do so. Clean up spill immediately. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Methods for containment**
Prevent further leakage or spillage if safe to do so. Dike to collect large liquid spills.

**Methods for cleaning up**
Take up with sand or other noncombustible absorbent material and place into containers for later disposal. Clean contaminated surface thoroughly.

### SECTION 7: Handling and storage

**Advice on safe handling**
Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Use in well ventilated areas. Wear personal protective equipment. Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice.

**Technical measures/Storage conditions**
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight. Keep away from contact with oxidizing materials. Keep in properly labeled containers. Use appropriate containment to avoid environmental contamination. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store in accordance with local regulations. Keep away from food, drink and animal feeding stuffs.

### SECTION 8: Exposure controls/personal protection

**Exposure Guidelines**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, dibutyl phenyl ester</td>
<td>TWA: 3.0 ppm</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td></td>
<td>Skin Designation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tributyl phosphate</td>
<td>TWA: 2.0 ppm</td>
<td>TWA: 5.0 mg/m³</td>
<td>IDLH: 30 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 2.0 ppm</td>
<td>TWA: 2.5 mg/m³</td>
</tr>
</tbody>
</table>

**Engineering measures**
Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Apply technical measures to comply with the occupational exposure limits. If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

**Personal protective equipment**

- **Eye/face protection**
  Tightly fitting safety goggles

- **Skin and body protection**
  Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact

- **Respiratory protection**
  If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene measures**
Handle in accordance with good industrial hygiene and safety practice.

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear Oily</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Color</td>
<td>Purple</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
</tr>
</tbody>
</table>
### SECTION 10: Stability and reactivity

#### Stability
Stable under recommended storage and handling conditions (see section 7).

#### Incompatible products
Strong oxidizing agents.

#### Conditions to avoid
None known based on information supplied

#### Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

#### Hazardous polymerization
Hazardous polymerization does not occur.

### SECTION 11: Toxicological information

#### Acute toxicity

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral</td>
<td>2200 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>LD50 dermal</td>
<td>&gt; 7940 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td>LC50 Inhalation</td>
<td>&gt; 4.5 mg/l (rat, 4 hr)</td>
<td></td>
</tr>
</tbody>
</table>

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SECTION 12: Ecological information

**Acute aquatic toxicity**

<table>
<thead>
<tr>
<th>Property</th>
<th>Result</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>96-hour LC50 - Fish</td>
<td>2.6 mg/l</td>
<td>Oncorhynchus mykiss (rainbow trout)</td>
</tr>
<tr>
<td></td>
<td>3.0 mg/l</td>
<td>Pimephales promelas (fathead minnow)</td>
</tr>
<tr>
<td>48-hour EC50 - Aquatic invertebrates</td>
<td>6.5 mg/l</td>
<td>Daphnia magna (Water flea)</td>
</tr>
<tr>
<td>72-hour EC50 - Algae/aquatic plants</td>
<td>8.4 mg/l</td>
<td>Selenastrum capricornutum</td>
</tr>
</tbody>
</table>

Harmful to aquatic life with long lasting effects.

**Ecotoxicity**

**Persistence and degradability**

Product is biodegradable.

**Bioaccumulation**

Bioaccumulation is unlikely.

**Mobility**

The product is insoluble and sinks in water. The product evaporates slowly. Adsorbs on soil.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, dibutyl phenyl ester</td>
<td>4.11</td>
</tr>
<tr>
<td>Tributyl phosphate</td>
<td>4.0</td>
</tr>
</tbody>
</table>

SECTION 13: Disposal considerations

**Waste disposal methods**

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). Dispose of in accordance with federal, state, and local regulations.
Contaminated packaging

Empty remaining contents. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Other information

This product meets the criteria for synthetic used oil under the U.S. EPA Standards for the Management of Used Oil (40 CFR 279). Those standards govern recycling and disposal in lieu of 40 CFR 260 -272 of the Federal hazardous waste program in states that have adopted these used oil regulations. Consult your attorney or appropriate regulatory official to be sure these standards have been adopted in your state. Recycle or burn in accordance with the applicable standards. Local, state, provincial, and national disposal regulations may be more or less stringent. This product should not be dumped, spilled, rinsed or washed into sewers or public waterways.

SECTION 14: Transport information

DOT
Not regulated

IMDG
Not regulated

IATA
Not regulated

TDG
Not regulated

SECTION 15: Regulatory information

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard yes
Chronic Health Hazard yes
Fire Hazard no
Sudden release of pressure hazard no
Reactive Hazard no

Clean Water Act
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

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International Regulations

Table: Chemical name vs. WHMIS Hazard Class

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Massachusetts</th>
<th>New Jersey</th>
<th>Pennsylvania</th>
<th>Illinois</th>
<th>Rhode Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, dibutyl phenyl ester</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tributyl phosphate</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class
D2B Toxic materials
Materials causing other toxic effects

International Inventories

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA (US)</td>
<td>Complies</td>
</tr>
<tr>
<td>DSL/NDSL (Canada)</td>
<td>Complies</td>
</tr>
<tr>
<td>EINECS/ELINCS (EU)</td>
<td>Complies</td>
</tr>
<tr>
<td>ENCS (Japan)</td>
<td>Complies</td>
</tr>
<tr>
<td>IECSC (China)</td>
<td>Complies</td>
</tr>
<tr>
<td>KECL (Korea)</td>
<td>-</td>
</tr>
<tr>
<td>PICCS (Philippines)</td>
<td>-</td>
</tr>
<tr>
<td>AICS (Australia)</td>
<td>Complies</td>
</tr>
</tbody>
</table>

SECTION 16: Other information

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazard</th>
<th>Flammability</th>
<th>Stability</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health hazard</th>
<th>Flammability</th>
<th>Physical hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

Prepared By
Solutia Inc.
A subsidiary of Eastman Chemical Company
575 Maryville Centre Drive
St. Louis, Missouri 63141 U.S.A.
Telephone: +1-314-674-6661

Revision date 30-Aug-2013
Revision Note New SDS format. SDS sections updated: All.
Date of the previous version: 30-Aug-2013

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. 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 in any process, unless specified in the text.
End of Material Safety Data Sheet