Section 1 • Product and Company Identification

Product Name: LPS® Copper Anti-Seize (Bulk)
Part Number(s): 02908, 02910, C02908, C02910
Chemical Name: Petroleum Hydrocarbon and Copper Mixture
Product Use: A low-friction anti-seize lubricant designed to prevent seizure and galling and resist settling and hardening of welding.

Manufacturer Information: LPS Laboratories, 4647 Hugh Howell Road, Tucker, GA, USA 30084
TEL: USA & Canada: 1 800 241-8334
Outside USA and Canada: +1 770 243-8800
FAX: USA & Canada: 1 800 543-1563
Outside USA and Canada: +1 770 243-8899
Emergency Telephone Number: Chemtrec: USA & Canada: 1 800 424-9300
Outside USA and Canada: +1 703 527-3887

Website: http://www.lpslabs.com

Section 2 • Hazards Identification

This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Emergency Overview:

Aerosol: Not applicable
Bulk: WARNING: Prolonged or repeated skin contact may cause irritation.
Primary route(s) of entry: Skin and eye contact.

Potential Acute Health Effects:

- Eyes: Irritating to eyes.
- Skin: Repeated exposure may cause skin dryness or cracking.
- Inhalation: Excessive inhalation of vapors can cause irritation of the respiratory tract, nausea, dizziness or headache.
- Ingestion: Product has a low order of acute oral toxicity, but ingestion of large quantities may cause nausea, vomiting, and gastrointestinal irritation.

Potential Chronic Health Effects:

- Carcinogenic Effects: NTP: No IARC: No OSHA: No ACGIH: No
- Mutagenic Effects: None
- Teratogenic Effects: None
- Target Organs: None
MATERIAL SAFETY DATA SHEET
LPS® Copper Anti-Seize (Bulk)

Revision Date: February 10, 2012
Supersedes: May 26, 2010

Medical conditions aggravated by exposure:
Persons with pre-existing central nervous system (CNS) disease, neurological conditions, skin disorders, chronic respiratory diseases, or impaired liver or kidney function should avoid exposure.

Signs and Symptoms
Stinging in eyes. Repeated or prolonged skin contact can cause redness, irritation, and scaling of the skin (dermatitis). Breathing of high vapor concentrations may cause headaches, stupor, irritation of throat and eyes, and kidney effects.

Section 3 • Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CASRN</th>
<th>Weight Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (Petroleum), Hydrotreated Heavy Naphthenic</td>
<td>64742-52-5</td>
<td>50 - 70%</td>
</tr>
<tr>
<td>Residual Oils (Petroleum), Hydrotreated</td>
<td>64742-57-0</td>
<td>10 - 20%</td>
</tr>
<tr>
<td>Copper</td>
<td>7440-50-8</td>
<td>1 - 10%</td>
</tr>
</tbody>
</table>

Section 4 • First Aid Measures

Eyes: Check for and remove contact lenses. Immediately, flush eyes with cool, clean, low-pressure water for at least 15 minutes. Hold eyelids apart to ensure complete irrigation of the eye and eyelid tissue. DO NOT use eye ointment. Seek medical attention if irritation persists.

Skin: Remove contaminated shoes and clothing. Clean affected area thoroughly with mild soap and water. DO NOT use ointments. Seek medical attention if irritation persists.

Inhalation: Immediately move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). If breathing is difficult, seek medical attention immediately.

Ingestion: DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If spontaneous vomiting is about to occur, place victim’s head below knees. If victim is drowsy or unconscious, place on the left side with head down. DO NOT leave victim unattended. Seek medical attention immediately.
Section 5 • Fire Fighting Measures

Products of Combustion: Carbon monoxide, carbon dioxide, sulphur oxides, some metallic oxides.

General Fire Hazards: High heat will cause product to boil, evolving vapor that could cause explosive rupture of closed containers.

Firefighting media: SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use CO2, water spray, fog or foam. Cool containing vessels with water jet in order to prevent pressure build-up, auto-ignition or explosions.

Protection Clothing (Fire): Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. Evacuate area and fight the fire from a maximum distance or use unmanned hose holders or monitor nozzles.

Sensitivity to Impact: None  Sensitivity to Static Discharge: None

Section 6 • Accidental Release Measures

Containment Procedures: Small Spill and Leak: Absorb with an inert material and dispose of properly.

Large Spill and Leak: Secure the area and control access. Dike far ahead of a liquid spill to ensure complete collection. Pick up free liquid for disposal using absorbent pads, sand, or other inert non-combustible absorbent materials. Place into appropriate waste containers for later disposal.

Clean-Up Procedures: Contain and recover spilled material when possible.

Evacuation Procedures: Ventilate area of leak or spill. Keep unnecessary and unprotected people away.

Special Procedures: Ventilate area. Wear personal protective equipment during cleanup.

Section 7 • Handling and Storage

Handling: Avoid contact with skin and eyes. Wash thoroughly after handling.

Storage: Keep in original container. Keep container tightly closed. Store in a well ventilated area away from sources of ignition.

Precautions to be taken in handling and storage: Store all materials in a dry, well-ventilated area. Avoid breathing vapors.
Exposure Guidelines:

<table>
<thead>
<tr>
<th>Component</th>
<th>CASRN</th>
<th>OSHA</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (Petroleum), Hydrotreated Heavy Naphthenic</td>
<td>64742-52-5</td>
<td>5 mg/m3 (oil mist) PEL</td>
<td>5 mg/m3 (oil mist) TLV</td>
<td>5 mg/m3 (oil mist) TWA</td>
<td>5 mg/m3 TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m3 (oil mist) STEL</td>
<td>10 mg/m3 (oil mist) STEL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual Oils (Petroleum), Hydrotreated</td>
<td>64742-57-0</td>
<td>5 mg/m3 (oil mist) PEL</td>
<td>5 mg/m3 (oil mist) TLV</td>
<td>5 mg/m3 (oil mist) TWA</td>
<td>None reported</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 mg/m3 (oil mist) STEL</td>
<td>10 mg/m3 (oil mist) STEL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper</td>
<td>7440-50-8</td>
<td>1 mg/m3 (mist) PEL</td>
<td>1 mg/m3 (mist) TLV</td>
<td>1 mg/m3 (mist) TWA</td>
<td>None reported</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 mg/m3 (mist) Canada</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Engineering Controls: Provide general and/or local exhaust ventilation to keep exposures below the exposure guidelines listed above.

Personal protective equipment

Eye protection: Safety glasses with side shields conforming to appropriate regulations. Eye wash fountain and emergency shower facilities are recommended.

Hand protection: Normally no hand protection is required; however, using chemical resistant gloves is recommended.

Respiratory protection: Typical use of this product under normal conditions does not require the use of respiratory protection. In the case of extreme temperatures, a dry residue will result when the grease and oils burn off. Where workers are exposed to the dust during removal of the film, use of air-purifying respirators or dust masks is suggested.

General Hygiene Considerations: Wash thoroughly after handling. Have eye-wash facilities immediately available.
MATERIAL SAFETY DATA SHEET
LPS® Copper Anti-Seize (Bulk)

Section 9 • Physical and Chemical Properties

Appearance: Paste
Odor: Petroleum
Solubility Description: Not soluble in water
Boiling Point: > 260°C (500°F)
Specific Gravity (H2O=1): 1.00 - 1.20 @ 20°C
Vapor Density (air = 1): > 5
Vapor Pressure: < 0.08 mm Hg @ 20°C
Rule 1171 PPC: Not established
V.O.C. Content: Aerosol: Not applicable
Melting Point: 260°C (500°F)
pH: Not applicable
Heat of combustion: Aerosol: Not applicable
Bulk: Not established

Color: Brown / Bright Copper
Evaporation Rate: < 0.01 (BuAc = 1)
Flash Point: 221°C (430°F)
Flash Point Method: Open Cup
Decomposition Temperature: Not established
Auto ignition temperature: > 260°C (500°F)
Flammable limits (estimated):
LOWER: 0.9%
UPPER: 7.0%
Partition Coefficient (octanol/water): Not established
Odor Threshold: Not established
Viscosity: Not established
Volatile: Nil

Section 10 • Stability and Reactivity

Chemical Stability: Product is stable under recommended storage conditions.
Conditions to Avoid: Keep away from ignition sources and extreme temperatures.
Incompatibility: Reactive or incompatible with oxidizing agents.
Hazardous Decomposition: These products are carbon oxides (CO, CO2), sulphur oxides, some metallic oxides.
Hazardous Polymerization: Will not occur.

Section 11 • Toxicological Information

Acute and Chronic Toxicity

A: General Product Information
An acute toxicity study of this product has not been conducted. Information given in this section relates only to individual constituents contained in this preparation.
## B: Component Analysis

<table>
<thead>
<tr>
<th>Component</th>
<th>CASRN</th>
<th>LC-50</th>
<th>LD-50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (Petroleum), Hydrotreated Heavy Naphthenic</td>
<td>64742-52-5</td>
<td>2.18 mg/L / rat / 4 hr</td>
<td>&gt; 5000 mg/kg / oral / rat</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; 2000 mg/kg / dermal / rabbit</td>
</tr>
<tr>
<td>Residual Oils (Petroleum), Hydrotreated</td>
<td>64742-57-0</td>
<td>2.18 mg/L / rat / 4 hr</td>
<td>&gt; 2000 mg/kg / oral / rat*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; 2000 mg/kg / dermal / rabbit*</td>
</tr>
<tr>
<td>Copper</td>
<td>7440-50-8</td>
<td>238 mg/m3 / non-mammalian / 24 hr</td>
<td>413 mg/kg / oral / mouse</td>
</tr>
</tbody>
</table>

* Supplier Data

### Section 12 • Ecological Information

**Mobility:** Non-volatile. Partially absorbed by soil.  
**Persistence / Degradability:** Only slightly biodegradable  
**Bioaccumulative potential:** Minimal bioaccumulation potential  
**Other adverse effects:** See Note 1 below

Ecological studies have not been conducted for this product. The following information is available for component(s) of this product.

#### Ecotoxicity

<table>
<thead>
<tr>
<th>Effects on Organisms</th>
<th>Component</th>
<th>CASRN</th>
<th>Test</th>
<th>Species</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity on Fishes</td>
<td>Distillates (Petroleum), Hydrotreated Heavy Naphthenic</td>
<td>64742-52-5</td>
<td>96-hr LC50</td>
<td>Oncorhynchus Mykiss</td>
<td>&gt; 5000 mg/L</td>
</tr>
<tr>
<td>Acute Toxicity on Daphnia</td>
<td>Distillates (Petroleum), Hydrotreated Heavy Naphthenic</td>
<td>64742-52-5</td>
<td>48-hr LC50</td>
<td>Daphnia Magna</td>
<td>&gt; 1000 mg/L</td>
</tr>
<tr>
<td>Bacterial Inhibition</td>
<td>Distillates (Petroleum), Hydrotreated Heavy Naphthenic</td>
<td>64742-52-5</td>
<td>Bacterial Growth Inhibition</td>
<td>Pseudomonas Fluorecens (Bacteria)</td>
<td>&gt; 1000 mg/L</td>
</tr>
<tr>
<td></td>
<td>Residual Oils (Petroleum), Hydrotreated</td>
<td>64742-57-0</td>
<td>Bacterial Growth Inhibition</td>
<td>Pseudomonas Fluorecens (Bacteria)</td>
<td>&gt; 1000 mg/L</td>
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<tr>
<td>Growth inhibition of algae</td>
<td>Distillates (Petroleum), Hydrotreated Heavy Naphthenic</td>
<td>64742-52-5</td>
<td>Growth Inhibition Concentration</td>
<td>Algae</td>
<td>0.15 mg/L</td>
</tr>
<tr>
<td></td>
<td>Residual Oils (Petroleum), Hydrotreated</td>
<td>64742-57-0</td>
<td>96-hr EC50</td>
<td>Algae</td>
<td>&gt; 1000 mg/L</td>
</tr>
<tr>
<td></td>
<td>Copper</td>
<td>7440-50-8</td>
<td>96-hr EC50</td>
<td>Algae</td>
<td>450 mg/L</td>
</tr>
</tbody>
</table>

* Supplier Data

Note 1 - Copper has been shown to be moderately toxic to fish.
Section 13 • Disposal Considerations

Waste Status: In its purchased form, this material does not meet the definition of a RCRA hazardous waste (40 CFR 261).

Disposal: Waste must be disposed of in accordance with any and all applicable environmental control rules and/or regulations.

Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information inaccurate, incomplete, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive than federal laws and regulations.

Section 14 • Transport Information

<table>
<thead>
<tr>
<th>D.O.T. Ground</th>
<th>Shipping Name: Not regulated</th>
<th>UN No.: NA</th>
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<tr>
<td>Hazard Class:</td>
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<td>Technical Name: NA</td>
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<tr>
<td>Subclass:</td>
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<td>Hazard Label: NA</td>
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<tr>
<td>Packing Group:</td>
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</table>

<table>
<thead>
<tr>
<th>Road/Rail - ADR/RID</th>
<th>UN No.: 3077</th>
<th>ADR Class: 9</th>
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<tbody>
<tr>
<td>Packing Group:</td>
<td>III</td>
<td>Classification Code: M7</td>
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<tr>
<td>Name and description:</td>
<td>Environmentally hazardous substance, solid, n.o.s. (copper)</td>
<td>Hazard ID No.: 90</td>
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<tr>
<td>Labeling:</td>
<td>9</td>
<td>Technical Name: Copper</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>IMDG-IMO</th>
<th>UN No.: 3077</th>
<th>Class: 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Name: Environmentally hazardous substance, solid, n.o.s. (copper)</td>
<td>Subsidiary Risk: NA</td>
<td></td>
</tr>
<tr>
<td>Labeling: 9</td>
<td>Packing Group: III</td>
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</tr>
<tr>
<td>Packing Instructions: P002, LP02</td>
<td>EmS: F-A, S-F</td>
<td></td>
</tr>
<tr>
<td>Marine pollutant: Yes</td>
<td>Technical Name: Copper</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IATA - ICAO</th>
<th>UN No.: 3077</th>
<th>Class: 9</th>
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</thead>
<tbody>
<tr>
<td>Shipping Name: Environmentally hazardous substance, solid, n.o.s. (copper)</td>
<td>Subclass: NA</td>
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</tr>
<tr>
<td>Labeling: Miscellaneous</td>
<td>Packing Group: III</td>
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<tr>
<td>Packing Instructions: Y956, 956</td>
<td>Technical Name: Copper</td>
<td></td>
</tr>
</tbody>
</table>

The preceding information is subject to change and must be verified prior to shipment. It is the responsibility of anyone offering hazardous materials for shipment to ensure compliance with all applicable regulations.

Section 15 • Regulatory Information

U.S. Federal Regulations

RCRA Hazardous Waste No.: None

Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA):
Copper 7440-50-8 RQ 5000 lbs.

Toxic Substances Control Act (TSCA):
All components of this product are TSCA inventory listed and/or exempt.

Superfund Amendments and Reauthorization Act (SARA) Title III SARA Section 311/312 (40 CFR 370) Hazard Categories:
None

This product contains the following toxic chemical(s) subject to reporting requirements of SARA Section 313 (40 CFR 372):
Copper 7440-50-8 max 8%

Section 112 Hazardous Air Pollutants (HAPs):
None
MATERIAL SAFETY DATA SHEET
LPS® Copper Anti-Seize (Bulk)

State Regulations

Revision Date: February 10, 2012
Supersedes: May 26, 2010

California:
This product does not contain chemical(s) known to the State of California to cause cancer, birth defects or other reproductive harm.

California and OTC States:
This product is not regulated by consumer product regulations.

New Jersey Right to Know:
Aerosol: Not applicable
Bulk: Distillates (Petroleum), Hydrotreated Heavy Naphthenic 64742-52-5 ● Residual Oils (Petroleum), Hydrotreated 64742-57-0 ● Magnesium Silicate Hydrate 14807-96-6 ● Copper 7440-50-8 ● Calcium Carbonate 471-34-1

International Regulations

Canadian Environmental Protection Act (CEPA):
All of the components of this product are included on the Canadian Domestic Substances list (DSL).

Canadian Workplace Hazardous Materials Information System WHMIS:
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Classification:
NOT WHMIS controlled

Other Regulations:
Montreal Protocol listed ingredients: None
Stockholm Convention listed ingredients: None
Rotterdam Convention listed ingredients: None
RoHS Compliant: Yes

Section 16 • Other Information

MSDS#: 12908
MSDS Preparation
Responsible Name: Elena Badiuzzi
Compliance Manager
Telephone: +1 770 243-8800

HMIS 1996
HMIS III

<table>
<thead>
<tr>
<th></th>
<th>1</th>
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</thead>
<tbody>
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<td>Health</td>
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<td>Health</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
<td>Flammability Aerosol:</td>
</tr>
<tr>
<td>Flammability Bulk:</td>
<td>1</td>
<td>Physical Hazard Aerosol:</td>
</tr>
<tr>
<td>Reactivity</td>
<td>1</td>
<td>Physical Hazard Bulk:</td>
</tr>
</tbody>
</table>

NFPA
Flammability

Health
Flammability
Reactivity

Notice to Reader:
To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Elena Badiuzzi, Compliance Manager
LPS Laboratories, a division of Illinois Tool Works