1. Product and Company Identification

Material name: LPS® Copper Anti-Seize Aerosol
Version #: 01
Issue date: 10-18-2012
CAS #: Mixture
Part Number: 02916
Product use: A low-friction, anti-seize spray lubricant designed to prevent seizure and galling, and resist settling and hardening of welding.
Manufacturer information:
LPS Laboratories, a division of Illinois Tool Works
4647 Hugh Howell Rd
Tucker, GA 30084 United States
www.lpslabs.com
1-800-241-8334 / 770-243-8800
Chemtrec 1-800-424-9300

2. Hazards Identification

Emergency overview:
DANGER
Extremely flammable. CONTENTS UNDER PRESSURE. Aerosol. Pressurized container may explode when exposed to heat or flame. Will be easily ignited by heat, spark or flames.

HARMFUL OR FATAL IF SWALLOWED.
Irritating to eyes and skin. Prolonged exposure may cause chronic effects.

OSHA regulatory status:
This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Potential health effects:
Routes of exposure:
- Inhalation
- Ingestion
- Skin contact
- Eye contact

Eyes:
Avoid contact with eyes. Causes eye irritation.

Skin:
Avoid contact with the skin. May cause skin irritation. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

Inhalation:
Avoid breathing dust/fume/gas/mist/vapors/spray. May cause irritation of respiratory tract.

Ingestion:
Harmful: may cause lung damage if swallowed. Do not ingest.

Target organs:

Chronic effects:
Conjunctiva. Edema. Jaundice. Liver injury may occur. Kidney injury may occur. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

Signs and symptoms:

Potential environmental effects:
Components of this product are hazardous to aquatic life. May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Mineral Spirits</td>
<td>64742-88-7</td>
<td>10 - 20</td>
</tr>
<tr>
<td>Petroleum Oil</td>
<td>64742-52-5</td>
<td>10 - 20</td>
</tr>
<tr>
<td>Propane</td>
<td>74-98-6</td>
<td>10 - 20</td>
</tr>
<tr>
<td>Copper, Copper Compounds</td>
<td>7440-50-8</td>
<td>2.5 - 10</td>
</tr>
<tr>
<td>N-Butane</td>
<td>106-97-8</td>
<td>2.5 - 10</td>
</tr>
<tr>
<td>Acetone</td>
<td>67-64-1</td>
<td>1 - 2.5</td>
</tr>
</tbody>
</table>
4. First Aid Measures

First aid procedures

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention immediately.

Skin contact
Remove and isolate contaminated clothing and shoes. Wash off with warm water and soap. For minor skin contact, avoid spreading material on unaffected skin. Get medical attention if irritation develops and persists.

Inhalation
Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim inhaled the substance. Call a physician if symptoms develop or persist.

Ingestion
Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Notes to physician
In case of shortness of breath, give oxygen. Keep victim under observation. Symptoms may be delayed.

General advice
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. IF exposed or concerned: Get medical advice/attention.

5. Fire Fighting Measures

Flammable properties
Heat may cause the containers to explode. Vapors may travel considerable distance to a source of ignition and flash back. Runoff to sewer may cause fire or explosion hazard.

Extinguishing media

Suitable extinguishing media
Extending media - small fires: Dry chemical powder.
Extending media - large fires: Carbon dioxide (CO2). Foam, water spray or fog.

Unsuitable extinguishing media
Do not use a solid water stream as it may scatter and spread fire.

Protection of firefighters

Protective equipment and precautions for firefighters
Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.

Fire fighting equipment/instructions
In case of fire and/or explosion do not breathe fumes. Firefighters should wear full protective clothing including self contained breathing apparatus. Cool containers exposed to heat with water spray and remove container, if no risk is involved. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Water runoff can cause environmental damage.

Specific methods
In the event of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out.

6. Accidental Release Measures

Personal precautions
Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak. Keep out of low areas. Ventilate closed spaces before entering them.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not contaminate water.
Methods for containment

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Use water spray to reduce vapors or divert vapor cloud drift. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.

Methods for cleaning up

Should not be released into the environment. The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk. Isolate area until gas has dispersed. Following product recovery, flush area with water. For waste disposal, see section 13 of the MSDS.

7. Handling and Storage

Handling

Vapors may form explosive mixtures with air. Pressurized container: Do not pierce or burn, even after use. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. All equipment used when handling the product must be grounded. Ground and bond containers when transferring material. Do not use if spray button is missing or defective. Do not re-use empty containers. Do not get this material in contact with eyes. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin. Wear personal protective equipment. Use only in area provided with appropriate exhaust ventilation. Avoid prolonged exposure. Avoid release to the environment.

Storage

Contents under pressure. The pressure in sealed containers can increase under the influence of heat. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Avoid exposure to long periods of sunlight. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

<table>
<thead>
<tr>
<th>US. ACGIH Threshold Limit Values</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acetone (67-64-1)</td>
<td>STEL</td>
<td>750 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>500 ppm</td>
<td></td>
</tr>
<tr>
<td>Copper, Copper Compounds (7440-50-8)</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Dust and mist.</td>
</tr>
<tr>
<td>Graphite (7782-42-5)</td>
<td>TWA</td>
<td>0.2 mg/m³</td>
<td>Fume.</td>
</tr>
<tr>
<td>Isobutane (75-28-5)</td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Magnesium Silicate Hydrate (14807-96-6)</td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Molydenum Disulfide (1317-33-5)</td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>N-Butane (106-97-8)</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>Petroleum Oil (64742-52-5)</td>
<td>TWA</td>
<td>1000 ppm</td>
<td></td>
</tr>
<tr>
<td>Propane (74-98-6)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>Talc, containing no asbestos or crystalline silica (12001-26-2)</td>
<td>TWA</td>
<td>1000 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

US. ACGIH, BEIs. Biological Exposure Indices

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone (67-64-1)</td>
<td>BEI</td>
<td>50 mg/l</td>
</tr>
</tbody>
</table>

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone (67-64-1)</td>
<td>PEL</td>
<td>2400 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Calcium Carbonate (471-34-1)</td>
<td>PEL</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>Copper, Copper Compounds (7440-50-8)</td>
<td>PEL</td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
<tr>
<td>Graphite (7782-42-5)</td>
<td>PEL</td>
<td>0.1 mg/m³</td>
<td>Fume.</td>
</tr>
</tbody>
</table>

Material name: LPS® Copper Anti-Seize Aerosol

MSDS No. 02916 Version #: 01 Issue date: 10-18-2012
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molybdenum Disulfide</td>
<td>PEL</td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
<tr>
<td>(1317-33-5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Petroleum Oil (64742-52-5)</td>
<td>PEL</td>
<td>5 mg/m³</td>
<td>Mist.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2000 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>500 ppm</td>
<td></td>
</tr>
<tr>
<td>Propane (74-98-6)</td>
<td>PEL</td>
<td>1800 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1000 ppm</td>
<td></td>
</tr>
</tbody>
</table>

US. OSHA Table Z-3 (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphite (7782-42-5)</td>
<td>TWA</td>
<td>15 mppcf</td>
<td>Total dust.</td>
</tr>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>TWA</td>
<td>0.3 mg/m³</td>
<td></td>
</tr>
<tr>
<td>(14807-96-6)</td>
<td></td>
<td>0.1 mg/m³</td>
<td>Respirable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20 mppcf</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.4 mppcf</td>
<td>Respirable.</td>
</tr>
<tr>
<td>Talc, containing no asbestos or</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>crystalline silica (12001-26-2)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Engineering controls
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Eye / face protection
Avoid contact with eyes. Wear safety glasses with side shields (or goggles). Eye wash fountain is recommended.

Skin protection
Wear appropriate chemical resistant clothing. Chemical resistant gloves.

Respiratory protection
No personal respiratory protective equipment normally required. If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.

General hygiene considerations
Do not get in eyes. Avoid contact with skin. Wash hands after handling. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Gel</td>
</tr>
<tr>
<td>Physical state</td>
<td>Gas</td>
</tr>
<tr>
<td>Form</td>
<td>Aerosol</td>
</tr>
<tr>
<td>Color</td>
<td>Copper Brown</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight petroleum odor</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not established</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not established</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not established</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not established</td>
</tr>
<tr>
<td>Melting point/Freezing point</td>
<td>500 °F (260 °C)</td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>Not soluble</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>0.99 @ 20°C</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 104.00 °F (&gt; 40.00 °C) Tag Closed Cup</td>
</tr>
<tr>
<td>Flammability limit - upper (%) temperature</td>
<td>Not established</td>
</tr>
<tr>
<td>Flammability limit - lower (%) temperature</td>
<td>Not established</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not established</td>
</tr>
<tr>
<td>VOC</td>
<td>39.4% per State and Federal Consumer Product Regulations</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>&gt; 1 BuAc</td>
</tr>
<tr>
<td>Viscosity</td>
<td>6600 cP @ 25°C</td>
</tr>
</tbody>
</table>
Percent volatile: 40 - 50%
Partition coefficient (n-octanol/water): Not established

Other data:
- Decomposition temperature: Not established
- Flammability (solid, gas): Flammable gas.
- Heat of combustion: > 30 kJ/g

10. Chemical Stability & Reactivity Information

Chemical stability: Material is stable under normal conditions.
Conditions to avoid: Heat, flames and sparks. Avoid temperatures exceeding the flash point.
Incompatible materials: Avoid contact with acids and oxidizing substances.
Possibility of hazardous reactions: Hazardous polymerization does not occur.

11. Toxicological Information

Local effects: Components of the product may be absorbed into the body through the skin. Liver toxicity. Contact may irritate or burn eyes.
Chronic effects: Hazardous by OSHA criteria. Prolonged inhalation may be harmful. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged exposure may cause chronic effects.
Subchronic effects: Kidney injury may occur.
Carcinogenicity:
- ACGIH Carcinogens:
  - Acetone (CAS 67-64-1): A4 Not classifiable as a human carcinogen.
  - Petroleum Oil (CAS 64742-52-5): A4 Not classifiable as a human carcinogen.
Neurological effects: Hazardous by OSHA criteria.
Further information: Symptoms may be delayed.

12. Ecological Information

Ecotoxicity: Contains a substance which causes risk of hazardous effects to the environment.
Environmental effects: Harmful to aquatic organisms. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability: Not inherently biodegradable.
Bioaccumulation / Accumulation:
- Bioaccumulative potential:
  - Octanol/water partition coefficient log Kow: 
    - Acetone: -0.24
    - Propane: 2.36
    - Isobutane: 2.76
    - N-Butane: 2.89
- Partition coefficient: 
  - Acetone: -0.24
  - Propane: 2.36
  - Isobutane: 2.76
  - N-Butane: 2.89
- Mobility in environmental media: The product is immiscible with water and will spread on the water surface.

13. Disposal Considerations

Waste codes: 
- D001: Waste Flammable material with a flash point < 140 F
- D003: Waste Reactive material

Material name: LPS® Copper Anti-Seize Aerosol
MSDS No. 02916 Version #: 01 Issue date: 10-18-2012
Disposal instructions
This material and its container must be disposed of as hazardous waste. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.

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

14. Transport Information

General
IMDG Regulated Marine Pollutant.

DOT
Basic shipping requirements:
- UN number: UN1950
- Proper shipping name: Aerosols
- Hazard class: 2.1
- Special precautions: Read safety instructions, MSDS and emergency procedures before handling.

Additional information:
- Special provisions: N82
- Packaging exceptions: 306
- Packaging non bulk: 304
- Packaging bulk: None

IATA
- UN number: UN1950
- UN proper shipping name: Aerosols, flammable
- Transport hazard class(es): 2.1
- ERG code: 10L

IMDG
- UN number: UN1950
- UN proper shipping name: AEROSOLS, MARINE POLLUTANT
- Transport hazard class(es): 2.1
- Environmental hazards
  - Marine pollutant: Yes

DOT

IATA; IMDG
Marine pollutant

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2))

Acetone (CAS 67-64-1) 150 KG_W
50 GALLONS_V

DEA Essential Chemical Code Number

Acetone (CAS 67-64-1) 6532

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Acetone (CAS 67-64-1) 35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1) 6532

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

Copper, Copper Compounds (CAS 7440-50-8) 1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Copper, Copper Compounds (CAS 7440-50-8) Listed.

CERCLA (Superfund) reportable quantity

Propane: 100.0000
Copper, Copper Compounds: 5000.0000
N-Butane: 100.0000
Acetone: 5000.0000
Isobutane: 100.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - Yes
Reactivity Hazard - No

Section 302 extremely hazardous substance

No

Section 311 hazardous chemical

No

Inventory status

Country(s) or region Inventory name On inventory (yes/no)*
Australia Australian Inventory of Chemical Substances (AICS) No
Canada Domestic Substances List (DSL) No
Canada Non-Domestic Substances List (NDSL) Yes
China Inventory of Existing Chemical Substances in China (IECSC) No
Europe European Inventory of Existing Commercial Chemical Substances (EINECS) No
Europe European List of Notified Chemical Substances (ELINCS) No
Japan Inventory of Existing and New Chemical Substances (ENCS) No
Korea Existing Chemicals List (ECL) Yes
New Zealand New Zealand Inventory No
Philippines Philippine Inventory of Chemicals and Chemical Substances (PICCS) No
Country(s) or region | Inventory name | On inventory (yes/no)*
--- | --- | ---
United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

**US - New Jersey RTK - Substances: Listed substance**

- Acetone (CAS 67-64-1) Listed.
- Calcium Carbonate (CAS 471-34-1) Listed.
- Copper, Copper Compounds (CAS 7440-50-8) Listed.
- Graphite (CAS 7782-42-5) Listed.
- Isobutane (CAS 75-28-5) Listed.
- Magnesium Silicate Hydrate (CAS 14807-96-6) Listed.
- Propane (CAS 74-98-6) Listed.
- Talc, containing no asbestos or crystalline silica (CAS 12001-26-2) Listed.

**US - Pennsylvania RTK - Hazardous Substances: All compounds of this substance are considered environmental hazards**

- Copper, Copper Compounds (CAS 7440-50-8) Listed.

**US - Pennsylvania RTK - Hazardous Substances: Listed substance**

- Acetone (CAS 67-64-1) Listed.
- Calcium Carbonate (CAS 471-34-1) Listed.
- Copper, Copper Compounds (CAS 7440-50-8) Listed.
- Graphite (CAS 7782-42-5) Listed.
- Isobutane (CAS 75-28-5) Listed.
- Magnesium Silicate Hydrate (CAS 14807-96-6) Listed.
- Propane (CAS 74-98-6) Listed.
- Talc, containing no asbestos or crystalline silica (CAS 12001-26-2) Listed.

**16. Other Information**

**Further information**

HMIS® is a registered trade and service mark of the NPCA.

**HMIS® ratings**

- Health: 1*
- Flammability: 4
- Physical hazard: 2

**NFPA ratings**

- Health: 1
- Flammability: 4
- Instability: 0

**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available.

**This data sheet contains changes from the previous version in section(s):**

- Product and Company Identification: Product Uses
- Hazards Identification: EU Hazard Classifications
- Composition / Information on Ingredients: Ingredients
- Physical & Chemical Properties: Multiple Properties
- Transport Information: Material Transportation Information
- Regulatory Information: United States