MATERIAL SAFETY DATA SHEET

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 Cardiac. Central nervous system. Eyes. Kidneys. Liver. Respiratory system. Skin.

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 Corneal damage. Narcosis. Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Conjunctivitis. Proteinuria. Defatting of the skin. Skin irritation. Rash.

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

Components	CAS #	Percent
Light Mineral Spirits	64742-88-7	10 - 20
Petroleum Oil	64742-52-5	10 - 20
Propane	74-98-6	10 - 20
Copper, Copper Compounds	7440-50-8	2.5 - 10
N-Butane	106-97-8	2.5 - 10
Acetone	67-64-1	1 - 2.5

Components	CAS #	Percent
Calcium Carbonate	471-34-1	1 - 2.5
Graphite	7782-42-5	1 - 2.5
Isobutane	75-28-5	1 - 2.5
Magnesium Silicate Hydrate	14807-96-6	1 - 2.5
Molydenum Disulfide	1317-33-5	1 - 2.5
Talc, containing no asbestos or crytalline silica	12001-26-2	1 - 2.5
Other components below reportable levels		20 - 40

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 Extinguishing media - small fires: Dry chemical powder.
Extinguishing 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

US. ACGIH Threshold Limit Values

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

US. ACGIH. BEIs. Biological Exposure Indices

Components	Type	Value
Acetone (67-64-1)	BEI	50 mg/l

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

Components	Type	Value	Form
Acetone (67-64-1)	PEL	2400 mg/m3	
		1000 ppm	
Calcium Carbonate (471-34-1)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Copper, Copper Compounds (7440-50-8)	PEL	1 mg/m3	Dust and mist.
		0.1 mg/m3	Fume.
Graphite (7782-42-5)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

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

Components	Type	Value	Form
Molydenum Disulfide (1317-33-5)	PEL	15 mg/m3	Total dust.
Petroleum Oil (64742-52-5)	PEL	5 mg/m3 2000 mg/m3 500 ppm	Mist.
Propane (74-98-6)	PEL	1800 mg/m3 1000 ppm	

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

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

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

Appearance Gel.

Physical state Gas.

Form Aerosol.

Color Copper Brown.

Odor Slight petroleum odor

Odor threshold Not established

pH Not applicable

Vapor pressure Not established

Vapor density Not established

Boiling point Not established

Melting point/Freezing point 500 °F (260 °C)

Solubility (water) Not soluble

Specific gravity 0.99 @ 20ºC

Relative density Not available.

Flash point > 104.00 °F (> 40.00 °C) Tag Closed Cup

Flammability limit - upper (%) temperature Not established

Flammability limit - lower (%) temperature Not established

Auto-ignition temperature Not established

VOC 39.4 % per State and Federal Consumer Product Regulations

Evaporation rate > 1 BuAc

Viscosity 6600 cP @ 25°C

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.
Hazardous decomposition products	Carbon oxides. Sulfur compounds. Nitrogen compounds.
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.
Magnesium Silicate Hydrate (CAS 14807-96-6)	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

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

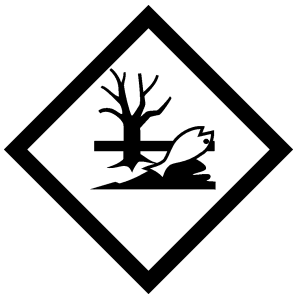
IMDG

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.
N-Butane (CAS 106-97-8)	Listed.
Propane (CAS 74-98-6)	Listed.
Talc, containing no asbestos or crytalline 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.
N-Butane (CAS 106-97-8)	Listed.
Propane (CAS 74-98-6)	Listed.
Talc, containing no asbestos or crytalline 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