MATERIAL SAFETY DATA SHEET
LPS® Dry Film Silicone Lubricant

Revision 5 **Revision Date: 11/19/08** **Supercedes: 10/17/2008**

Section 1 • Product and Company Identification

Product Name:	LPS® Dry Film Silicone Lubricant
Part Number:	01616, C01616
Chemical Name:	Isohexane and silicone mixture
Product Use:	A dry film industrial lubricant for rubber, plastic and metal parts.
Manufacturer Information:	LPS Laboratories, 4647 Hugh Howell Rd., Tucker, GA, USA 30084
TEL:	1 770-243-8880
Emergency Telephone Number:	1-800-424-9300 Chemtrec; Outside U.S.: (703) 527-3887
FAX:	1 770-243-8899
Website:	http://www.lpslabs.com

PLAIN LANGUAGE HAZARD SUMMARY

Material Safety Data Sheets can be confusing. Federal and State laws require us to include a great deal of technical information that probably won't help the non-professional. LPS includes this "PLAIN LANGUAGE HAZARD SUMMARY" to address the questions and concerns of the average worker. If you have additional health, safety or product questions, don't hesitate to call us at 800/241-8334.

Worker Toxicity

LPS® Dry Film Silicone Lubricant is designed to provide fast-drying, thin-film lubrication to plastic and rubber surfaces that cannot tolerate hydrocarbons. It may also be used as a mold release or as a high-temperature, dry-film lubricant on metal components where silicone may be tolerated. It contains solvents that can be irritating to skin and eyes. We suggest you wear safety glasses and gloves and avoid extended exposure. Don't breath large amounts of the vapor (it will dry out your nasal passages and if you breathe large amounts in poorly ventilated areas it can make you dizzy and even sick). Don't spray LPS® Dry Film Silicone Lubricant for extended periods without adequate ventilation. If you're going to perform work involving a lot of product in a poorly ventilated area, use of a respirator or a self-contained breathing apparatus. For more exposure and first aid information, refer to MSDS Sections 2, 8 and 11.

Flammability

LPS® Dry Film Silicone Lubricant does not typically burst into flame when it is sprayed onto a hot surface or even into a flame. However, it does contain flammable components and may flash under certain conditions. The overall flammability of this item is a "3" on the HMIS and NFPA flammability rating systems. ("3" represents the flammability of many paint thinners. "4" represents the flammability of LPG – "gas grill fuel"). Store product away from heat sources and do not spray into ignition sources (welding, grinding, pilot lights, live electric equipment, etc.).

Disposal

If multiple cans of LPS® Dry Film Silicone Lubricant are ruptured, notify the proper environmental or safety department at your company right away. The contents tend to dry very quickly and may leave ice on a surface. Never pour LPS® Dry Film Silicone Lubricant down a drain. See section 13 for additional information.

Section 2 • Hazards Identification

This material is 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: WARNING: Contents under pressure. Harmful or Fatal if Swallowed.

Primary route(s) of entry: Skin and Eye contact. Inhalation.

Potential Acute Health Effects:

Eyes Irritating to eyes

Skin Repeated exposure may cause skin dryness or cracking. Liquid product may cause slight frostbite.

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 injury if aspirated into lungs.

Potential Chronic Health Effects:

Carcinogenic Effects: NTP: No **IARC:** No **OSHA:** No

Mutagenic Effects: None

Teratogenic Effects: None

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). Direct exposure of skin or eyes to concentrated liquid may cause frostbite. Breathing of high vapor concentrations may cause headaches, stupor, irritation of throat and eyes, and kidney effects.

Section 3 • Composition / Information on Ingredients

Component	CASRN	Percent by Weight
Dimethyl Ether	115-10-6	40 - 50%
1,1,1,2-tetrafluoroethane	811-97-2	40 - 50%
Isohexane	107-83-5	5 - 10%
n-hexane	110-54-3	0.1 - 0.2%

Section 4 • First Aid Measures

Eyes: Check for and remove contact lenses. If irritation or redness develops, 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 immediately.

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

Flash point: TCC CLOSED CUP: none , CLEVELEAND OPEN CUP: <-18°C (0°F)

Flammable limits: LOWER: 0.6% UPPER: 7% **Auto ignition Temperature:** >306°C (583°F)

Products of Combustion: Carbon monoxide and carbon dioxide.

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

Sensitivity to Impact: None. **Sensitivity to Static Discharge:** None.

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.

Special Remarks on Explosion Hazards: Containers may explode when heated and overwhelm sprinklers.

Section 6 • Accidental Release Measures

Containment Procedures	**Small Spill and Leak:**	Eliminate ignition sources. Absorb with an inert material and dispose of properly.
	Large Spill and Leak:	Eliminate ignition sources, 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	Recover free product and place in suitable container for disposal.	
Evacuation Procedures	Ventilate area of leak or spill. Keep unnecessary and unprotected people away.	
Special Procedures	Remove all sources of ignition. Ventilate area. Wear appropriate protective equipment during cleanup.	

Section 7 • Handling and Storage

Handling: DO NOT spray into or around ignition sources. After handling, always wash hands thoroughly with soap and water. Use only with adequate ventilation. Avoid breathing vapors or spray mists.

Storage: Keep container closed and in a cool, well-ventilated area. Avoid all sources of ignition (spark or flame). Store below 120°F. *Store aerosols as Level 2 Aerosol (NFPA 30B).*

Precautions to be taken in handling and storage: Store all materials in dry, well-ventilated area. Avoid breathing vapors. Ground and bond containers before transferring materials.

Section 8 • Exposure Controls / Personal Protection

Ingredients	CASRN	OSHA TWA-PEL	OSHA STEL	ACGIH-TLV	ACGIH-STEL	NIOSH REL
Dimethyl ether	115-10-6	Not Available	Not Available	Not Available	Not Available	Not Available
Isohexane	107-83-5	Not Available	Not Available	500 ppm	1000 ppm	Not Available
1,1,1,2-Tetrafluoroethane	811-97-2	Not Available	Not Available	Not Available	Not Available	Not Available
n-hexane	110-54-3	500 ppm	Not Available	Not Available	Not Available	50 ppm

Engineering Controls: Provide local exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits.

Personal Protection:

Eyes: Safety goggles.

Respiratory: If airborne concentrations are above the applicable exposure limits (listed above), use NIOSH approved respiratory protection.

Hands: Use nitrile gloves.

General Hygiene Considerations: Wash thoroughly after handling. Have eye-wash facilities immediately available.

Section 9 – Physical and Chemical Properties

Appearance:	Liquid.	**Colour:**	Clear, colorless
Odour/Taste:	Ether-like	**Evaporation Rate:**	<1(Ethyl Ether =1)
Solubility Description:	Not soluble in water.	**Flash Point (°C):**	<-18°C (< 0°F)
Odour Threshold:	Not Determined.	**Decomposition Temperature:**	Not Determined.
Boiling Point:	60.5°C @ 1 atm.	**Flash Point Method:**	COC
Specific Gravity (Water=1):	0.74-0.76 @ 20°C	**Auto Ignition Temperature (°C):**	306°C (869°F)
Vapour Density (air=1):	~3.0	**Partition Coefficient (octanol/water):**	>1
Vapour Pressure:	47 kPa @ 38 °C	**Percent Volatiles by volume:**	95%
pH:	Not applicable	**Viscosity:**	<14 mm²/sec
Flammable limits (estimated):	LOWER: 0.6% UPPER: 7%	**Melting Point (°C):**	Not Applicable
V.O.C. content	50%, 375 g/L,		

Section 10 • Stability and Reactivity

Chemical Stability:	Product is stable under recommended storage conditions.
Conditions to Avoid:	Keep away from heat and ignition sources. Exposure to direct sunlight for extended periods. Temperatures in excess of 50°C.
Incompatibility:	Extremely reactive or incompatible with oxidizing agents.
Hazardous Decomposition:	Combustion will generate smoke, possibly thick and choking, resulting in zero visibility and combustion products include carbon monoxide and carbon dioxide.
Hazardous Polymerization:	Will not occur.

Section 11 • Toxicological Information

Acute and Chronic Toxicity

A: General Product Information

Following exposure to vapors, this material can produce central nervous system depression. High atmospheric concentrations can result in eye, nasal and respiratory tract irritation. However, if handled in accordance with good industrial hygiene practice, this product will not present a significant hazard in the workplace.

B: Acute Toxicity

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.

Ingredients	CASRN	LC-50	LD-50	Neurotoxicity	Reproductive Toxicity
Dimethyl ether	115-10-6	93000 mg/m^3 15 minutes/mouse	Not Established	Not Established	Not Established
Isohexane	107-83-5	Not Established.	Not Established.	Not Established.	Not Established.
1, 1, 1, 2-tetrafluoroethane	811-97-2	1500 gm/m^3/4H/rat	Not appropriate	Not Established.	Not Established.
n-hexane	110-54-3	150000 mg/m^3/2H/rat	25 g/kg acute oral/ rat	At 190 ppm/8W may cause structural changes in human peripheral nerves.	Rodent/rat, 5000 pm/20H/ fetotoxicity RTECS MN9275000

Section 12 • Ecological Information

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

Effect on Organisms	Component	CASRN	Test	Species	Results
Acute Toxicity on Fishes	n-hexane	110-54-3	48-hr LC_{100}	Leuciscus idus melanotus	260,000 µg/L
Acute Toxicity on Daphnia	n-hexane	110-54-3	24-hr LC_{50}	Daphnia magna	50,000 µg/L
Bacterial inhibition	No Data Available				
Growth inhibition of algae	n-hexane	110-54-3	EC_{50}	Anabaena inaequalis	1.70%
Bioaccumulation in fish	No Data Available				

Mobility: Semi-volatile. Readily absorbed into soil.

Persistence and degradability: Non-biodegradable.

Bioaccumulative potential: Minimal bioaccumulation potential

Other adverse effects: None known.

Section 13 • Disposal Considerations

Waste Status: Aerosol products, if depressurized and emptied to less than 2.5 cm of fluid contents are classified as non-hazardous waste under 40 CFR 261.7 (U.S.). If disposed of in its received form, this item carries waste code D003. (U.S.)

Disposal: Waste must be disposed of in accordance with national, regional and local environmental control 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

D.O.T. Ground	**Shipping Name:**	Consumer Commodity	**UN Number:**	NA
	Hazard Class:	ORM-D	**Technical Name:**	NA
	Subclass:	NA	**Hazard Label:**	ORM-D Already on box
Road/Rail - ADR/RID	**UN no:**	1950	**ADR Class:**	2
	Packing group:	NA	**Classification code:**	5A
	Name and Description:	Aerosols, asphyxiant	**Hazard ID no:**	NA
	Labeling:	2.2		
IMDG-IMO	**UN no:**	1950	**Class:**	2
	Shipping Name:	AEROSOLS	**Subsidiary Risk:**	2.2
	Packing Instructions:	P003, LP02	**Packing group:**	NA
	Marine pollutant:	NO	**EmS:**	F-D, S-U
IATA-ICAO	**UN no:**	1950	**Class:**	2.2
	Shipping Name:	AEROSOLS, Non-Flammable	**Subclass**	NA
	Packing instructions:	203, Y203 (Ltd. Qty.)	**Packing group:**	NA
	Labeling:	Non-Flammable Gas		

Section 15 • Regulatory information

U.S. Federal Regulations

RCRA Hazardous Waste No.: D003

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA): none.

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

Superfund Amendments and Reauthorization Act (SARA) Title III
SARA Section 311/312 (40 CFR 370) Hazard Categories:
Sudden Release of Pressure, Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard.

This product contains the following toxic chemical(s) subject to reporting requirements of SARA Section 313 (40 CFR 372): n-hexane (RQ 5000lbs)

Section 112 Hazardous Air Pollutants (HAPs): None

State Regulations

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

California and OTC States: This product conforms to consumer regulations.

New Jersey Right to Know: Dimethyl Ether 115-10-6 ● Tetrafluoroethane 811-97-2 ● Isohexane 107-83-5 ● Dimethylpolysiloxanes 63148-62-9 ● n-Hexane 110-54-3

International Regulations

Canadian Environmental Protection Act: 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:

Aerosol: Class A, Class D2B

Other Regulations

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

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LPS® Dry Film Silicone Lubricant

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Section 16 • Other Information

MSDS#11616 Responsible Name: Clea Johnson Regulatory Affairs Coordinator	**HMIS 1996**		**HMIS III**		**NFPA** Flammability Health 1 3 0 Reactivity
	Health:	1	**Health:**	[/]1	
	Flammability:	3	**Flammability:**	2	
	Reactivity:	0	**Physical Hazard:**	2	

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