



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product identifier	LPS® Dry Film PTFE Lubricant	
Version #	01	
Issue date	09-03-2015	
CAS #	Mixture	
Part Number	02616, C02616	
Product use	A dry film industrial lubricant for rubber, plastic and metal parts.	
Manufacturer information	ITW Pro Brands 4647 Hugh Howell Rd Tucker, GA 30084 United States lpssds@itwprobrands.com www.lpslabs.com 1-800-241-8334 / 770-243-8800 Chemtrec 1-800-424-9300	
Supplier	Not available.	

2. Hazards Identification

Emergency overview	DANGER CONTENTS UNDER PRESSURE. Aerosol. Flammable. Pressurized container may explode when exposed to heat or flame. Causes eye irritation. Vapors may cause drowsiness and dizziness.
Potential health effects	
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.
Eyes	Causes eye irritation. Do not get this material in contact with eyes.
Skin	Do not get this material in contact with skin.
Inhalation	Intentional misuse by concentrating and inhaling the product can be harmful or fatal. Prolonged inhalation may be harmful. Avoid breathing dust/fume/gas/mist/vapors/spray.
Ingestion	Exposure by ingestion of an aerosol is unlikely. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Do not ingest.
Target organs	Central nervous system. Eyes. Respiratory system. Skin.
Signs and symptoms	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Symptoms may include redness, edema, drying, defatting and cracking of the skin.
Potential environmental effects	May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
Ethane, 1,1,1,2-Tetrafluoro-(HFC-134a)	811-97-2	30 - 40
Isopropanol	67-63-0	10 - 20
Non-hazardous components	CAS #	Percent
Dimethyl Ether	115-10-6	40 - 50

4. First Aid Measures

First aid procedures	
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops and persists. For minor skin contact, avoid spreading material on unaffected skin. In case of contact with liquefied gas, thaw frosted parts with lukewarm water. Wash clothing separately before reuse.
Eye contact	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Continue rinsing. If eye irritation persists: Get medical advice/attention.
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. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Notes to physician	Symptoms may be delayed.
General advice	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties	Heat may cause the containers to explode. Ruptured cylinders may rocket.
Extinguishing media	
Suitable extinguishing media	Alcohol resistant foam. Water. Dry powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Protection of firefighters	
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame. During fire, gases hazardous to health may be formed.
Protective equipment for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus. Structural firefighters protective clothing will only provide limited protection.
Fire fighting equipment/instructions	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Do not direct water at source of leak or safety devices as icing may occur. Containers should be cooled with water to prevent vapor pressure build up. Some of these materials, if spilled, may evaporate leaving a flammable residue.
Specific methods	Cool containers exposed to flames with water until well after the fire is out.
Explosion data	
Sensitivity to static discharge	Yes
Sensitivity to mechanical impact	None known.
Hazardous combustion products	May include oxides of carbon.
General fire hazards	Flammable aerosol.

6. Accidental Release Measures

Personal precautions	Consider initial downwind evacuation for at least 500 meters (1/3 mile). Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Fully encapsulating, vapor protective clothing should be worn for spills and leaks with no fire. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. For personal protection, see section 8 of the MSDS.
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. If possible, turn leaking containers so that gas escapes rather than liquid. Move the cylinder to a safe and open area if the leak is irreparable. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Ventilate the area. Should not be released into the environment. Stop the flow of material, if this is without risk. Isolate area until gas has dispersed. Following product recovery, flush area with water. Clean up in accordance with all applicable regulations. For waste disposal, see section 13 of the MSDS.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. 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. Do not re-use empty containers. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure. Do not get this material on clothing. Do not use in areas without adequate ventilation. Wear positive pressure self-contained breathing apparatus (SCBA). Wear personal protective equipment. Wash thoroughly after handling. Avoid release to the environment.

Storage

Contents under pressure. 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. Store in a well-ventilated place. Keep container dry. Store away from incompatible materials (see Section 10 of the MSDS). Keep in an area equipped with sprinklers.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	984 mg/m3
		400 ppm
	TWA	492 mg/m3
		200 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
DIMETHYL ETHER (CAS 115-10-6)	TWA	1000 ppm
Isopropanol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	1230 mg/m3
		500 ppm
	TWA	983 mg/m3
		400 ppm

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

Components	Type	Value
Isopropanol (CAS 67-63-0)	PEL	980 mg/m3
		400 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
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Isopropanol (CAS 67-63-0)	40 mg/l	Acetone	Urine	*
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* - For sampling details, please see the source document.

Engineering controls Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

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

Skin protection Avoid contact with the skin. Wear chemical protective equipment that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

Respiratory protection Avoid breathing dust/fume/gas/mist/vapors/spray. If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.

Hand protection Wear protective gloves. Chemical resistant gloves are recommended.

9. Physical & Chemical Properties

Appearance	Liquid.
Physical state	Gas.
Form	Aerosol. Compressed gas.
Color	White.
Odor	Ether-like.
Odor threshold	Not established
pH	Not applicable
Vapor pressure	Not available.
Vapor density	> 1 (air = 1)
Boiling point	Not established
Melting point/Freezing point	Not established
Solubility (water)	5 %
Specific gravity	0.79 - 0.81 @ 20°C
Relative density	Not available.
Flash point	Not established
Flammability limits in air, upper, % by volume	Not established
Flammability limits in air, lower, % by volume	Not established
Auto-ignition temperature	Not established
VOC	57 % per US State and Federal Consumer Product Regulations
Evaporation rate	> 1 (BuAc = 1)
Viscosity	Not established
Percent volatile	96 - 99 %
Partition coefficient (n-octanol/water)	< 1
Other data	
Decomposition temperature	Not established
Heat of combustion	15.5 kJ/g

10. Chemical Stability & Reactivity Information

Chemical stability Risk of explosion. Instability caused by elevated temperatures.

Conditions to avoid Avoid heat, sparks, open flames and other ignition sources. Aerosol containers are unstable at temperatures above 50°C. Contact with incompatible materials.

Incompatible materials Strong oxidizing agents. Isocyanates. Chlorine.

Hazardous decomposition products Carbon oxides. Hydrogen fluoride.
Possibility of hazardous reactions Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Components	Species	Test Results
Dimethyl Ether (CAS 115-10-6)		
Acute		
Inhalation		
LC50	Mouse	494 ppm, 15 Minutes 386 ppm, 30 Minutes
	Rat	308.5 mg/l, 4 Hours
Isopropanol (CAS 67-63-0)		
Acute		
Dermal		
LD50	Rabbit	12800 mg/kg 16.4 ml/kg, 24 Hours
Inhalation		
<i>Vapor</i>		
LC50	Rat	> 10000 ppm, 6 Hours
Oral		
LD50	Dog	4797 mg/kg
	Mouse	3600 mg/kg
	Rabbit	5.03 g/kg
	Rat	5.84 g/kg 4.7 g/kg

Acute effects Not expected to be acutely toxic.
Sensitization Not classified.
Local effects Irritating to eyes.
Chronic effects Prolonged inhalation may be harmful. Not expected to be hazardous by WHMIS criteria.
Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
ACGIH Carcinogens
 Isopropanol (CAS 67-63-0) A4 Not classifiable as a human carcinogen.
Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.
Serious eye damage/irritation Causes serious eye irritation.
Mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Reproductive effects This product is not expected to cause reproductive or developmental effects.
Teratogenicity Not available.
Symptoms and target organs Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Causes eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Synergistic materials Not available.

12. Ecological Information

Ecotoxicological data

Components	Species	Test Results
Isopropanol (CAS 67-63-0)		
Aquatic		
Fish	LC50 Bluegill (<i>Lepomis macrochirus</i>)	> 1400 mg/l, 96 hours

Ecotoxicity	Contains a substance which causes risk of hazardous effects to the environment.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Aquatic toxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	Not inherently biodegradable.
Partition coefficient	
LPS® Dry Film PTFE Lubricant	< 1
Dimethyl Ether	0.1
Ethane, 1,1,1,2-Tetrafluoro-(HFC-134a)	1.06
Isopropanol	0.05
Mobility in environmental media	This product is miscible in water.
Other adverse effects	None known.

13. Disposal Considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Do not re-use empty containers.

14. Transport Information

TDG

UN number	UN1950
UN proper shipping name	AEROSOLS, flammable
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	Not available.
Special precautions for user	Read safety instructions, MSDS and emergency procedures before handling.

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	10L
Special precautions for user	Read safety instructions, MSDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS
Transport hazard class(es)	
Class	2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No.
EmS	F-D, S-U
Special precautions for user	Read safety instructions, MSDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

IATA; IMDG; TDG



15. Regulatory Information

Canadian regulations

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS status

Controlled

WHMIS classification

A - Compressed Gas
B5 - Flammable Aerosols
D2B - Other Toxic Effects-TOXIC

WHMIS labeling



International Inventories

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

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other Information

Disclaimer

The information provided in this 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.

Prepared by

Not available.

Revision Information

This document has undergone significant changes and should be reviewed in its entirety.