



MATERIAL SAFETY DATA SHEET

LPS[®] EFX

Revision Date: May 19, 2011

Supersedes: June 16, 2009

Section 1 • Product and Company Identification

Product Name: LPS[®] EFX

Part Number: 01820 (aerosol), 01801, 01805, 01855, C01820 (aerosol), C01801, C01805, C01855

Chemical Name: Heptane/Acetone/Isopropanol mixture

Product Use: A solvent degreaser designed to remove or dissolve grease, grime, oil and other oil-based contaminants from a variety of substrates, including automotive or miscellaneous metallic parts.

Manufacturer Information: LPS Laboratories, 4647 Hugh Howell Rd., Tucker GA, USA 30084

TEL: USA & Canada: 1 800 241-8334
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Outside USA and Canada: +1 703 527-3887

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 will not 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, do not hesitate to call us at 1 770 243-8800.

Worker Toxicity

LPS[®] EFX is a solvent degreaser designed to remove or dissolve grease, grime, oil and other oil-based contaminants from a variety of substrates, including automotive or miscellaneous metallic parts. It contains heptane, acetone and isopropyl alcohol which can be irritating to skin at a minimum and, if handled improperly, can be dangerous. We suggest you wear gloves and avoid extended exposure to unprotected skin. Do not get it in your eyes (it stings) or 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). Do not spray LPS[®] EFX for extended periods without adequate ventilation. If you are going to perform work involving a lot of product in a poorly ventilated area, use of a respirator or even a self-contained breathing apparatus may be necessary. For more exposure and first aid information, refer to MSDS Sections 2, 8 and 11.

Flammability

LPS[®] EFX is extremely flammable, having a flash point below 32°F (0°C). Do not spray onto live electrical equipment or in or around ignition sources. Store product away from heat sources.

Disposal

If you spill LPS[®] EFX, notify the proper environmental or safety department at your company right away. If LPS[®] EFX becomes contaminated with another substance and is rendered unusable for cleaning, the resulting mixture will likely fall under at least one hazardous classification. See section 13 for more details.



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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:

Aerosol: DANGER: Extremely flammable. Eye irritant. Vapor harmful. Contents under pressure. Harmful or fatal if swallowed.

Bulk: DANGER: Extremely flammable. Eye irritant. Vapor harmful. 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.

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. May cause injury if aspirated into lungs.

Potential Chronic Health Effects:

Carcinogenic Effects: NTP: No IARC: No OSHA: No ACGIH: No

Mutagenic Effects: None

Teratogenic Effects: None

Target Organs: Central nervous system, lungs, eyes, skin

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

Component	CASRN	Weight Percent
N-heptane	142-82-5	70 – 90%
Acetone	67-64-1	8 – 12%
Isopropanol	67-63-0	8 – 12%
Carbon dioxide (aerosol only)	124-38-9	2 – 4%



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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.
- Notes to Physician:** This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity (See Section 2 - Ingestion) when deciding whether to induce vomiting. Administration of high doses of isopropanol in combination with known hepatotoxic chemicals resulted in enhanced liver toxicity in experimental animals.

Section 5 • Fire Fighting Measures

Products of Combustion: Carbon monoxide and carbon dioxide.

General Fire Hazards: Do not use on energized equipment. 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.

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

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: Aerosols may explode upon heating, spread fire and overcome sprinkler systems.



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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 in a cool, well-ventilated area. Avoid all sources of ignition (spark or flame). Store between 40°F and 120°F (4.4°C and 49°C).

Precautions to be taken in handling and storage: Store aerosols as Level 3 Aerosol (NFPA 30B). Store bulk liquids as NFPA Class 1B Liquid. Store all materials in dry, well-ventilated area. Avoid breathing vapors. Ground and bond containers before transferring materials.

Section 8 • Exposure Controls / Personal Protection

Exposure Guidelines:

Component	CASRN	OSHA TWA-PEL	OSHA STEL	ACGIH-TLV	ACGIH-STEEL	NIOSH
Acetone	67-64-1	1000 ppm	Not Established	500 ppm	750 ppm	250 ppm TWA
n-Heptane	142-82-5	500 ppm	Not Established	400 ppm	500 ppm	85 ppm TWA
Isopropanol	67-63-0	400 ppm*	Not Established	200 ppm*	400 ppm*	400 ppm TWA
Carbon Dioxide (aerosol only)	124-38-9	5000 ppm	30000 ppm	5000 ppm	30000 ppm	5000 ppm TWA 30000 ppm STEL

*Supplier Recommendation



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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, if product will be sprayed for an extended period, "overspray" onto skin may occur. If so, use chemical resistant gloves conforming to appropriate regulations. Please observe the instructions regarding permeability and breakthrough time that are provided by the supplier of the gloves.

Respiratory protection: Typical use of this product under normal conditions does not require the use of respiratory protection. If airborne concentrations are above the applicable exposure limits (listed above), use NIOSH approved respiratory protection (i.e. organic vapor cartridge).

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

Section 9 • Physical and Chemical Properties

Appearance:	Liquid	Color:	Colorless
Odor:	Characteristic	Evaporation Rate:	1.6 (Water=1)
Solubility Description:	<10% in water	Flash Point:	-6°C (+20°F) – dispensed liquid
Boiling Point:	60.5°C (141°F)	Flash Point Method:	Tag-Closed Cup
Specific Gravity (H₂O=1):	0.65 – 0.68 @ 20°C	Decomposition Temperature:	Not Established
Vapor Density (air=1):	~2.8	Auto Ignition Temperature	306°C (583°F)
Vapor Pressure:	Not Established	Flammable limits (estimated):	LOWER: 1.5% UPPER: 9.0%
Rule 1171 PPc:	Aerosol: 30.2 mmHg at 20°C Bulk: 32.8 mmHg at 20°C	Partition Coefficient (octanol/water):	<1
V.O.C. Content:	Aerosol: 86.9%, 696 g/L, 5.8 lb/gal per CARB/OTC/EPA Bulk: 90%, 720 g/L, 6.0 lb/gal per CARB/OTC/EPA	Odor Threshold:	Not Established
Melting Point:	Not Established	Viscosity:	<3 cSt @ 25°C
pH:	Not Applicable	Volatiles:	100%
Heat of combustion:	Aerosol: >30 kJ/g Bulk: >30 kJ/g		



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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 122°F (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: Component Analysis

Component	CASRN	LC-50	LD-50
n-Heptane	142-82-5	103 g/m ³ / rat / 4 hr	17 g/kg / oral / rat* 3,400 mg/kg / dermal / rabbit*
Acetone	67-64-1	50,100 mg/m ³ / rat / 8 hr	5,500 mg/kg / oral / rat 20,000 mg/kg / dermal / rabbit
Isopropanol	67-63-0	16,000 ppm / rat / 4 hr*	5,045 mg/kg / oral / rat*
Carbon Dioxide (aerosol only)	124-38-9	470,000 ppm / rat / 30min	Not Appropriate

*Supplier Data

Section 12 • Ecological Information

- | | | | |
|-----------------------------------|---|---------------------------------------|-------------------------|
| Mobility: | Volatile. May partially absorb into sediment. | Persistence and degradability: | Partially biodegradable |
| Bioaccumulative potential: | No bioaccumulation potential | Other adverse effects: | None known |



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

Ecotoxicity:

Effect on Organisms	Component	CASRN	Test	Species	Results
Acute Toxicity on Fishes	n-Heptane	142-82-5	48-hr EC ₅₀	Leuciscus idus	500 mg/L
			96-hr EC ₅₀	Branchiura sowerbyi	2,500,000 µg/L
	Acetone	67-64-1	96-hr EC ₅₀	Rasbora heteromorpha	4 µg/L
			11-14 hr MATC	Champia parvula	<14 µg/L
	Isopropanol	67-63-0	Toxicity Threshold	Chilomonas paramecium	104 mg/L
Acute Toxicity on Daphnia	Acetone	67-64-1	48-hr EC ₅₀	Daphnia pulex	35 µg/L
	Isopropanol	67-63-0	24-hr EC ₅₀	Daphnia magna	> 10,000 mg/L
Bacterial inhibition	No data available				
Growth inhibition of algae					
Bioaccumulation in fish					

*Supplier Data

Section 13 • Disposal Considerations

Waste Status: Aerosol cans, if depressurized and emptied to less than 1 inch (2.54 cm) of fluid contents, are classified as non-hazardous waste under 40 CFR 261.7 (U.S.). If disposed of in its received form, the aerosol product carries waste code(s) D001 and D003 (U.S.). If disposed of in its received form, the bulk product carries waste code(s) D001 (U.S.).

Disposal: Waste must be disposed of in accordance with federal, state, provincial, 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, provincial, state and local waste disposal requirements may be more restrictive than federal laws and regulations.



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Section 14 • Transport Information

Aerosol

D.O.T. Ground	Shipping Name:	Consumer Commodity	UN no:	NA
	Hazard Class:	ORM-D	Technical Name:	NA
	Subclass:	NA	Hazard Label:	ORM-D Already on box
	Packing group:	NA		
Road/Rail - ADR/RID	UN no:	1950	ADR Class:	2
	Packing group:	NA	Classification code:	5F
	Name and Description:	Aerosols, Flammable	Hazard ID no:	NA
	Labeling:	2.1	Technical Name:	NA
IMDG-IMO	UN no:	1950	Class:	2
	Shipping Name:	AEROSOLS	Subsidiary Risk:	2.1
	Labeling:	2	Packing group:	NA
	Packing Instruction:	P003, LP02	EmS:	F-D, S-U
IATA-ICAO	Marine pollutant:	No	Technical Name:	NA
	UN no:	1950	Class:	2.1
	Shipping Name:	Aerosols, Flammable	Subclass:	NA
	Packing instructions:	203, Y203 (Ltd. Qty)	Packing group:	NA
	Labeling:	Flammable Gas	Technical Name:	NA

Bulk

D.O.T. Ground	Shipping Name:	Flammable Liquid, n.o.s.	UN Number:	1993
	Hazard Class:	3	Technical Name:	Heptanes, Acetone
	Subclass:	NA	Hazard Label:	Flammable Liquid
	Packing Group:	II		
Road/Rail - ADR/RID	UN no:	1993	ADR Class:	3
	Packing group:	II	Classification code:	F1
	Name and Description:	Flammable Liquid, n.o.s.	Hazard ID No.:	33
	Labeling:	3	Technical Name:	Heptanes, Acetone
IMDG-IMO	UN no:	1993	Class:	3
	Shipping Name:	Flammable Liquid, n.o.s.	Subsidiary Risk:	NA
	Labeling:	3	Packing group:	II
	Packing Instructions:	P001, LP01	EmS:	F-E, S-E
IATA-ICAO	Marine pollutant:	No	Technical Name:	Heptanes, Acetone
	UN no:	1993	Class:	3
	Shipping Name:	Flammable Liquid, n.o.s.	Subclass:	NA
	Packing instructions:	Y341 (Ltd Qty), 353, 364 (CAO)	Packing group:	II
	Labeling:	Flammable Liquid	Technical Name:	Heptanes, Acetone

Note: For air shipment only
 5 gallon (18.93 liter) containers must be shipped via "cargo aircraft only" (CAO).
 55 gallon (208 liter) drums CANNOT be shipped by air.

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.



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Section 15 • Regulatory information

U.S. Federal Regulations

RCRA Hazardous Waste No.: D001, D003 (aerosols only)

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA): Acetone 67-64-1 5000 lbs

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 (aerosols only), 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): No individual section 313 component is present at or above 1%.

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 is for manufacturing use only – not for retail sale.

New Jersey Right to Know:

Aerosol: Heptane 142-82-5 • Acetone 67-64-1 • Isopropanol 67-63-0 • Carbon Dioxide 124-38-9

Bulk: Heptane 142-82-5 • Acetone 67-64-1 • Isopropanol 67-63-0

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 B5, Class D2B



WHMIS Classification: Bulk
Class B3, Class D2B



Other Regulations

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



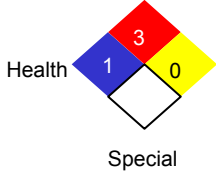
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Section 16 • Other Information

MSDS# 11820 MSDS Preparation Responsible Name: Elena Badiuzzi Compliance Manager Telephone: +1 770 243-8800	HMIS 1996		HMIS III		NFPA Flammability  Health Reactivity Special
	Health:	1	Health:	[] 1	
	Flammability:	3	Flammability aerosol: Flammability bulk:	4 3	
	Reactivity:	0	Physical Hazard aerosol: Physical Hazard bulk:	2 0	

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