



MATERIAL SAFETY DATA SHEET  
LPS® F-104

Revision Date: January 19, 2012

Supersedes: March 19, 2009

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**Section 1 • Product and Company Identification**

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**Product Name:** LPS® F-104

**Part Number(s):** 04920 (aerosol), 04905, 04955, C04920 (aerosol), C04905, C04955

**Chemical Name:** d-Limonene / Hydrocarbon Mixture

**Product Use:** A solvent degreasing agent designed for removing tar, adhesives, grease, oil and other residues from metal and other hard surfaces.

**Manufacturer Information:** LPS Laboratories, 4647 Hugh Howell Road, Tucker, GA, USA 30084  
**TEL:** USA & Canada: 1 800 241-8334  
Outside USA and Canada: +1 770 243-8800  
**FAX:** USA & Canada: 1 800 543-1563  
Outside USA and Canada: +1 770 243-8899

**Emergency Telephone Number:** Chemtrec: USA & Canada: 1 800 424-9300  
Outside USA and Canada: +1 703 527-3887

**Website:** <http://www.lpslabs.com>

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**Section 2 • Hazards Identification**

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*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: Flammable. Contents under pressure. Harmful or fatal if swallowed.

**Bulk:** DANGER: Combustible. Keep away from heat and flame. Harmful or fatal if swallowed.

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

**Potential Acute Health Effects:**

**Eyes:** Irritating to eyes.

**Skin:** Prolonged or repeated skin contact with liquid may cause defatting resulting in drying, redness and possible blistering. This product contains citrus d-Limonene – a skin sensitizing agent.

**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:** None



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**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.

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**Section 3 • Composition / Information on Ingredients**

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Component	CASRN	Weight Percent
Light Mineral Spirits	8052-41-3 / 64742-47-8	70 - 80%
2-Methoxy-1-Methylethyl Acetate	108-65-6	5 - 10%
1-Propoxypropan-2-ol	1569-01-3	5 - 10%
d-limonene	5989-27-5	1 - 5%
Diisopropylbenzene	25321-09-9	1 - 5%
Carbon Dioxide (aerosol only)	124-38-9	1 - 5%

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**Section 4 • First Aid Measures**

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<b>Eyes:</b>	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.
<b>Skin:</b>	Remove contaminated shoes and clothing. Clean affected area thoroughly with mild soap and water. DO NOT use ointments. Seek medical attention if irritation persists.
<b>Inhalation:</b>	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.
<b>Ingestion:</b>	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.
<b>Notes to Physician:</b>	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. Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias.



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**Section 5 • Fire Fighting Measures**

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**Products of Combustion:** Carbon monoxide and carbon dioxide.

**General Fire Hazards:** 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 CO<sub>2</sub>, 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**

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**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 a 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 personal protective equipment during cleanup.

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**Section 7 • Handling and Storage**

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**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. Avoid contact with eyes, skin and clothing.

**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 all materials in a dry, well-ventilated area. Avoid breathing vapors.*



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**Section 8 • Exposure Controls / Personal Protection**

**Exposure Guidelines:**

Component	CASRN	OSHA	ACGIH	NIOSH	Supplier
Light Mineral Spirits	8052-41-3 / 64742-47-8	500 ppm PEL	100 ppm TLV	350 mg/m <sup>3</sup> - 10 hr TWA 1800 mg/m <sup>3</sup> - 15 minute Ceiling	None reported
2-Methoxy-1-Methylethyl Acetate	108-65-6	Not established	Not established	Not established	None reported
1-Propoxypropan-2-ol	1569-01-3	Not established	Not established	Not established	None reported
d-limonene	5989-27-5	Not established	Not established	Not established	None reported
Diisopropylbenzene	25321-09-9	Not established	Not established	Not established	None reported
Carbon Dioxide (aerosol only)	124-38-9	5000 ppm PEL	5000 ppm TLV 30000 ppm STEL	5000 ppm TWA 30000 ppm STEL	None reported

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

**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, wear 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.



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**Section 9 • Physical and Chemical Properties**

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<b>Appearance:</b>	Liquid	<b>Color:</b>	Colorless / water-white
<b>Odor:</b>	Mild orange	<b>Evaporation Rate:</b>	0.15 (BuAc = 1)
<b>Solubility Description:</b>	Slightly soluble in water	<b>Flash Point:</b>	40°C (104°F) - dispensed liquid
<b>Boiling Point:</b>	~157°C (315°F)	<b>Flash Point Method:</b>	Tag-Closed Cup
<b>Specific Gravity (H<sub>2</sub>O=1):</b>	0.77 - 0.79 @ 20°C	<b>Decomposition Temperature:</b>	Not established
<b>Vapor Density (air = 1):</b>	4.8 - 5.3	<b>Auto ignition temperature:</b>	> 228°C (442°F)
<b>Vapor Pressure:</b>	~ 2 mm Hg @ 20°C	<b>Flammable limits (estimated):</b>	LOWER: 0.7% UPPER: 6.0%
<b>Rule 1171 PPc:</b>	< 5 mm Hg @ 20°C	<b>Partition Coefficient (octanol/water):</b>	< 1
<b>V.O.C. Content:</b>	Aerosol: 97.2% per State & Federal Consumer Product Regulations; 755 g/L per SCAQMD Rule 102 Bulk: 100% per State & Federal Consumer Product Regulations; 777 g/L per SCAQMD Rule 102	<b>Odor Threshold:</b>	Not established
<b>Melting Point:</b>	Not established	<b>Viscosity:</b>	< 3 cSt @ 25°C
<b>pH:</b>	Not applicable	<b>Volatiles:</b>	100%
<b>Heat of combustion:</b>	Aerosol: > 30 kJ/g Bulk: > 30 kJ/g		

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**Section 10 • Stability and Reactivity**

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<b>Chemical Stability:</b>	Product is stable under recommended storage conditions.
<b>Conditions to Avoid:</b>	Keep away from heat and ignition sources.
<b>Incompatibility:</b>	Extremely reactive or incompatible with oxidizing agents.
<b>Hazardous Decomposition:</b>	These products are carbon oxides (CO, CO <sub>2</sub> ).
<b>Hazardous Polymerization:</b>	Will not occur.



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**Section 11 • Toxicological Information**

**Acute and Chronic Toxicity**

**A: General Product Information**

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.

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
Light Mineral Spirits	8052-41-3 / 64742-47-8	> 5500 mg/m <sup>3</sup> / rat / 4 hr	> 5000 mg/kg / oral / rat
			> 3000 mg/kg / dermal / rat
2-Methoxy-1-Methylethyl Acetate	108-65-6	Not established	8532 mg/kg / oral / rat
			> 5000 mg/kg / dermal / rabbit
1-Propoxypropan-2-ol	1569-01-3	> 2230 ppm / rat / 6 hr	2519 mg/kg / oral / rat
			3818 mg/kg / dermal / rabbit
d-limonene	5989-27-5	Not established	4400 mg/kg / oral / rat
			> 5000 mg/kg / dermal / rabbit*
Diisopropylbenzene	25321-09-9	> 2.1 mg/L / rat / 6 hr	3900 mg/kg / oral / rat
Carbon Dioxide (aerosol only)	124-38-9	470000 ppm / rat / 30 minutes	Not appropriate

\* Supplier Data

**Section 12 • Ecological Information**

**Mobility:** Semi-volatile. Readily absorbed into soil. **Persistence / Degradability:** Only slightly biodegradable

**Bioaccumulative potential:** Minimal bioaccumulation potential **Other adverse effects:** None known

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

**Ecotoxicity**

Effects on Organisms	Component	CASRN	Test	Species	Results
<b>Acute Toxicity on Fishes</b>	1-Propoxypropan-2-ol	1569-01-3	4-day LC50	Oncorhynchus Mykiss	35,000 µg/L
	d-limonene	5989-27-5	96-hr EC50	Pimephales Promelas	1,490 mg/L
			96-hr LC50	Oncorhynchus Mykiss	> 100 mg/L*
<b>Acute Toxicity on Daphnia</b>	1-Propoxypropan-2-ol	1569-01-3	48-hr LC50	Daphnia Magna	> 100 mg/L*
<b>Bacterial Inhibition</b>	No data available				
<b>Growth inhibition of algae</b>	1-Propoxypropan-2-ol	1569-01-3	96-hr EC50	Selenastrum Capricornutum	1,466 mg/L*
<b>Bioaccumulation in fish</b>	1-Propoxypropan-2-ol	1569-01-3	BCF	Aquatic or Terrestrial	2.32 mg/L

\* Supplier Data



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**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 the waste codes D001 and D003 (U.S.). If disposed of in its received form, the bulk product carries the waste code D001 (U.S.).
- Disposal:** Waste must be disposed of in accordance with any and all applicable environmental control rules and/or 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**

Aerosol

D.O.T. Ground	Shipping Name:	Consumer Commodity	UN No.:	NA
	Hazard Class:	NA	Technical Name:	NA
	Subclass:	NA	Hazard Label:	ORM-D Already on box
	Packing Group:	NA		
Road/Rail - ADR/RID	UN No.:	1950	ADR Class:	2.1
	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:	NA	Packing Group:	NA
	Packing Instructions:	P003, LP02	EmS:	F-D, S-U
IATA - ICAO:	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:	Not regulated	UN No.:	NA
	Hazard Class:	NA	Technical Name:	NA
	Subclass:	NA	Hazard Label:	NA
	Packing Group:	NA		
Road/Rail - ADR/RID	UN No.:	1993	ADR Class:	3
	Packing Group:	III	Classification Code:	F1
	Name and description:	Flammable liquid, n.o.s.	Hazard ID No.:	30
	Labeling:	3	Technical Name:	Naphtha, d-limonene
IMDG-IMO	UN No.:	1993	Class:	3
	Shipping Name:	Flammable liquid, n.o.s.	Subsidiary Risk:	NA
	Labeling:	3	Packing Group:	III
	Packing Instructions:	P001, LP01	EmS:	F-E, S-E
IATA - ICAO:	UN No.:	1993	Class:	3
	Shipping Name:	Flammable liquid, n.o.s.	Subclass:	NA
	Packing Instructions:	Y344 (Ltd. Qty.), 355, 366 (CAO)	Packing Group:	III
	Labeling:	Flammable Liquid	Technical Name:	Naphtha, d-limonene

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, Compensation 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 (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 other reproductive harm.

California and OTC States: Not for Retail Sale. Note to customers in any jurisdiction adopting CARB or OTC Model rules for consumer products: This product is sold to and is to be used exclusively by establishments which manufacture or construct goods or commodities.

**New Jersey Right to Know:**

Aerosol: Light Mineral Spirits 8052-41-3 / 64742-47-8 • 2-Methoxy-1-Methylethyl Acetate 108-65-6 • 1-Propoxypropan-2-ol 1569-01-3 • Carbon Dioxide 124-38-9  
• d-Limonene 5989-27-5  
Bulk: Light Mineral Spirits 8052-41-3 / 64742-47-8 • 2-Methoxy-1-Methylethyl Acetate 108-65-6 • 1-Propoxypropan-2-ol 1569-01-3 • d-Limonene 5989-27-5 • Diisopropylbenzene 25321-09-9

**International Regulations**

Canadian Environmental Protection Act (CEPA):  
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#: 14920 MSDS Preparation Responsible Name: Elena Badiuzzi Compliance Manager Telephone: +1 770 243-8800	<b>HMIS 1996</b>		<b>HMIS III</b>		Health  Reactivity Special
	Health:	1	Health:	[1] 1	
	Flammability:	2	Flammability Aerosol:	4	
			Flammability Bulk:	2	
	Reactivity:	0	Physical Hazard Aerosol:	2	
			Physical Hazard Bulk:	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