



MATERIAL SAFETY DATA SHEET

LPS[®] F-104 Solvent Degreaser

Revision 5

Revision Date 3/19/09

Supercedes: 10/21/08

Section 1 • Product and Company Identification

Product Name:	LPS [®] F-104 [°] Solvent/Degreaser
Part Number:	04920, 04928, 04905, 04955, C04920, C04928, 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 Rd., Tucker, GA, USA 30084
TEL:	1 770-243-8800
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[®] F-104[°] Solvent/Degreaser is designed to remove grease, grime, oil and other oil-based contaminants from a variety of substrates, including automotive and miscellaneous metallic parts. It contains d-limonene and aliphatic hydrocarbons that can be irritating to skin. We suggest you wear gloves and avoid extended exposure to unprotected skin. Don't 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). Don't spray or use LPS[®] F-104[°] Solvent/Degreaser 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 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[®] F-104[°] Solvent/Degreaser generates a "flame extension" when sprayed into an ignition source (flame, arc, etc.), but in having a flash point of 104 °F, it is generally safe to use for most industrial applications. Store product away from heat sources and do not spray into live electrical equipment.

Disposal

If you spill LPS[®] F-104[°] Solvent/Degreaser, notify the proper environmental or safety department at your company right away. If LPS[®] F-104[°] Solvent/Degreaser becomes contaminated with another substance and is rendered unusable for cleaning, the resulting mixture will 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: Flammable. Contents under pressure. Harmful or fatal if swallowed.

Bulk: DANGER: Combustible. 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: Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts maybe harmful. This material can get into the lungs during swallowing or vomiting. This 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). 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
Solvent Naphtha (Petroleum), Medium Aliphatic	64742-88-7	70 - 80%
Propylene Glycol Monomethyl Ether Acetate	108-65-6	5 - 10%
Propylene Glycol Mono-n-propyl Ether	1569-01-3	5 - 10%
d-Limonene	5989-27-5	1 - 5%
Carbon Dioxide (aerosol only)	124-38-9	1 - 5%



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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.

Section 5 • Fire Fighting Measures

Products of Combustion: Carbon monoxide and carbon dioxide.

Firefighting media: Use CO₂, DRY chemical powder, 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: Aerosols may explode upon heating, spread fire and overcome sprinkler systems.

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. | |



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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 below 120°F.

Precautions to be taken in handling and storage: *Store aerosols as Level 3 Aerosol (NFPA 30B).* Store all materials in dry, well-ventilated area. Avoid breathing vapors.

Section 8 • Exposure Controls / Personal Protection

Exposure Guidelines:

Component	CASRN	OSHA TWA-PEL	OSHA STEL	ACGIH-TLV	ACGIH-STEEL	NIOSH REL
Solvent Naphtha (Petroleum), Medium Aliphatic	64742-88-7	100 ppm	Not Established	100 ppm	Not Established	Not Established
Propylene Glycol Monomethyl Ether Acetate	108-65-6	Not Established	Not Established	Not Established	Not Established	Not Established
Propylene Glycol Mono-n-Propyl Ether	1569-01-3	Not Established	Not Established	Not Established	Not Established	Not Established
d-Limonene	5989-27-5	Not Established	Not Established	Not Established	Not Established	Not Established
Carbon Dioxide (aerosol only)	124-38-9	5000 ppm	Not Established	5000 pm	30000 ppm	NIOSH REL 5000 ppm NIOSH STEL 30000 ppm

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

Personal Protection:

Eyes: Safety glasses.

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.



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Section 9 • Physical and Chemical Properties

Appearance:	Liquid.	Color:	Colorless / water-white
Odour/Taste:	Mild Orange	Rule 1171 PPc:	<5 mmHg at 20°C
Solubility Description:	Slight solubility in water	Total Composite Vapor Pressure :	~2 mmHg at 20°C
Boiling Point:	~157°C (315 °F)	Evaporation Rate:	0.15 (BuAc=1)
Specific Gravity (Water=1):	0.77-0.79 @ 25 °C	Flash Point:	40°C (104°F)
Vapour Density (air=1):	4.8-5.3	Flash Point Method:	Tag-Closed Cup.
V.O.C. Content:	Aerosol: 97.2%, 755 g/L, 6.3#/gal. Bulk: 100%, 777 g/L, 6.5 #/gal.	Partition Coefficient (octanol/water):	<1
Flammable limits (estimated):	LOWER: 0.7% UPPER: 6%	Auto Ignition Temperature (°C):	>228°C(442°F)
Viscosity:	<3 cSt @ 25°C	Volatiles	100%
pH:	Not applicable		

Section 10 • Stability and Reactivity

Stability and Reactivity: The product is stable.

Incompatibility with Various Substances: Extremely reactive or incompatible with oxidizing agents.

Hazardous decomposition products: These products are carbon oxides (CO, CO₂)

Hazardous polymerization: Will not occur.



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Section 11 • Toxicological Information

Acute and Chronic Toxicity

A: General Product Information

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. 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.

Component	CASRN	LC-50	LD-50
Solvent Naphtha (Petroleum), Medium Aliphatic	64742-88-7	>5500 mg/m ³ /rat/4hr	>5000 mg/kg/oral/rat >3000 mg/kg/dermal/rat
Propylene Glycol Monomethyl Ether Acetate	108-65-6	Not Established	8532 mg/kg/oral/rat >5000mg/kg/dermal/rabbit
Propylene Glycol Mono-n-Propyl Ether	1569-01-3	>2230ppm/rat/6hr	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
Carbon Dioxide (aerosol only)	124-38-9	470000 ppm/rat/30min	Not Established

Section 12 • Ecological Information

Mobility:	Semi-volatile. Readily absorbed into soil.	Persistence and degradability:	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:

Effect on Organisms	Component	CASRN	Test	Species	Results
Acute Toxicity on Fishes	d-Limonene	5989-27-5	4-day LC ₅₀	Oncorhynchus mykiss	35000 µg/L
			96hr EC ₅₀	Pimephales promelas	1490 mg/L
Acute Toxicity on Daphnia	Propylene Glycol Mono-n-Propyl Ether	1569-01-3	96hr LC ₅₀	Oncorhynchus mykiss	> 100 mg/L*
	Propylene Glycol Mono-n-Propyl Ether	1569-01-3	48hr LC ₅₀	Water flea	> 100 mg/L*
Bacterial inhibition	No data available				
Growth inhibition of algae	Propylene Glycol Mono-n-Propyl Ether	1569-01-3	96hr EC ₅₀	Selenastrum	1466 mg/L*
Bioaccumulation in fish	Propylene Glycol Mono-n-Propyl Ether	1569-01-3	BCF	Aquatic or Terrestrial	3.2*

*Supplier Data



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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, 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 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

Aerosol

D.O.T. Ground	Shipping Name:	ORM-D	UN Number:	NA
	Hazard Class:	NA	Technical Name:	NA
	Subclass:	NA	Hazard Label:	ORM-D Already on box
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		
IMDG-IMO	UN no:	1950	Class:	2.1
	Shipping Name:	AEROSOLS	Subsidiary Risk:	NA
	Packing Instructions:	NA	Packing group:	NA
	Marine pollutant:	NO	EmS:	F-D, S-U
IATA-ICAO	UN no:	1950	Class:	2.1
	Shipping Name:	AEROSOLS, Flammable	Subclass:	NA
	Packing instructions:	NA	Packing group:	NA
	Labeling:	Flammable Gas		



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Bulk

D.O.T. Ground	Shipping Name:	Not Regulated	UN Number:	NA
	Hazard Class:	NA	Technical Name:	NA
	Subclass:	NA	Hazard Label:	NA
Road/Rail - ADR/RID	UN no:	1993	ADR Class:	3
	Packing group:	NA	Classification code:	F1
	Name and Description:	Flammable Liquids, n.o.s.	Hazard ID no:	NA
	Labeling:	3	Technical Name:	(Naphtha, d-limonene)
IMDG-IMO	UN no:	1993	Class:	3
	Shipping Name:	Flammable Liquids, n.o.s.	Subsidiary Risk:	NA
	Packing Instructions:	P001, LP01	Packing group:	III
	Marine pollutant:	NO	EmS:	F-E, S-E
IATA-ICAO	UN no:	1993	Class:	3
	Shipping Name:	Flammable Liquids, n.o.s	Subclass	NA
	Packing instructions:	NA	Packing group:	III
	Labeling:	Flammable Liquid	Technical Name:	(Naphtha, d-limonene)

Section 15 • Regulatory information

U.S. Federal Regulations

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

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 (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



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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:

Solvent Naphtha (petroleum) 64742-88-7 • Propylene Glycol Monomethyl Ether Acetate 108-65-6 • Propylene Glycol Mono-n-Propyl Ether 1569-01-3 • d-Limonene 5989-27-5 • Carbon Dioxide 124-38-9 (aerosol only)

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.

Section 16 • Other Information

MSDS#14920 Responsible Name: Clea Johnson Regulatory Affairs Coordinator	HMIS 1996		HMIS III		NFPA Flammability Health 1 2 0 Reactivity
	Health:	1	Health:	[] 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.

Clea L Johnson, Regulatory Affairs Coordinator
LPS Laboratories
A division of Illinois Tool Works