



# MATERIAL SAFETY DATA SHEET

## LPS VOC Free Contact Cleaner

### Section 1 • Product and Company Identification

**Manufacturer's Name:** LPS Laboratories

**Trade Name:** LPS VOC Free Contact Cleaner

**Part Numbers:** 03416

**Address:**

4647 Hugh Howell Road  
Tucker, GA USA 30085-5052

**Chemical Family:** HCFC / ketone mixture

**Telephone Number:** 770-243-8800

**Emergency Telephone Number:**  
1-800-424-9300 Chemtrec;  
Outside U.S.: (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 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 VOC Free Contact Cleaner is designed for the removal of dirt, moisture, dust, flux, and oxides from the internal components of electronic or precision equipment such as circuit boards, and the internal components of electronic devices, including but not limited to, radios, compact disc (CD) players, digital video disc (DVD) players, and computers. It contains "HCFC 225" and acetone 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. 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 LPS VOC Free Contact Cleaner 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 LPS VOC Free Contact Cleaner is not flammable under normal circumstances, exhibiting no "flame extension" and having no flash point. However, if large amounts of product are sprayed into a de-energized high amperage device and allowed to only partially dry before restart, a flash could result. Do not spray onto live electrical equipment or in or around ignition sources. Store product away from heat sources.

#### Disposal

If you spill LPS VOC Free Contact Cleaner it should evaporate almost immediately, but still notify the safety department at your company right away. If LPS VOC Free Contact Cleaner 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

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This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

#### Emergency Overview:

**DANGER:** Contains hydrochlorofluorocarbons and acetone. Use only as directed. Intentional misuse by deliberately concentrating and inhaling contents can be harmful or fatal. Contents under pressure. Do not use near fire, flame or while smoking. Do not puncture, incinerate or store container above 120°F (49°C). Over-exposure to vapor may cause irritation to the nose and throat and may also cause dizziness, drowsiness, and other effects on the central nervous system. Use with adequate ventilation and avoid prolonged or repeated breathing of vapors. Avoid contact with eyes. Liquid and vapor may cause eye irritation. In case of eye contact, flush eyes with water and call physician. Prolonged skin contact may cause irritation. Wash hands after use. Harmful or fatal if swallowed. If swallowed do not induce vomiting. Call a physician immediately. Keep out of reach of children.

**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 hepatitis, heart irregularities, and unconsciousness. Intentional misuse can be fatal. Vapor reduces oxygen available for breathing and is heavier than air.

**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

**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.



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### Section 3 • Composition / Information on Ingredients

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Component	CASRN	Percent by Weight
1,3-Dichloro-1,1,2,2,3-pentafluoropropane	507-55-1	30 - 40
1,1,1,2-Tetrafluoroethane	811-97-2	20 - 30
3,3 Dichloro-1,1,1,2,2-pentafluoropropane	422-56-0	20 - 30
Acetone	67-64-1	7 - 10

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### Section 4 • First Aid Measures

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- 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.

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### Section 5 • Fire Fighting Measures

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**Products of Combustion:** Hydrochloric and hydrofluoric acids, possible carbonyl halides, 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, 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.

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### Section 6 • Accidental Release Measures

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**Small Spill and Leak:** Absorb with an inert material and dispose of properly.

**Large Spill and Leak:** For large spills, 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.



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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 1 Aerosol (NFPA 30B).* Store all materials in dry, well-ventilated area. Avoid breathing vapors.

### Section 8 • Exposure Controls / Personal Protection

Ingredients	CASRN	OSHA PEL-TWA	ACGIH-TLV	Other Limits
1,3-Dichloro-1,1,2,2,3-pentafluoropropane	507-55-1	Not Established	Not Established	50 ppm TWA (Supplier recommendation)
1,1,1,2-Tetrafluoroethane	811-97-2	Not Established	Not Established	1,000 ppm TWA (Supplier recommendation)
3,3 Dichloro-1,1,1,2,2-pentafluoropropane	422-56-0	Not Established	Not Established	400 ppm TWA (Supplier recommendation)
Acetone	67-64-1	750 ppm	750 ppm	1000 STEL (ACGIH)

**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 :** Use an organic vapor phase cartridge-style respirator if ventilation is inadequate. "Half-mask" versions are normally appropriate.

**Hands:** Use solvent resistant gloves such as Ansell® Laminate Film.

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

### Section 9 • Physical and Chemical Properties

<b>Appearance:</b>	Clear liquid.	<b>Colour:</b>	Colorless.
<b>Odor/Taste:</b>	Mild, ether-like.	<b>Evaporation Rate:</b>	0.9 (diethyl ether=1)
<b>Solubility Description:</b>	8% in water.	<b>Flash Point :</b>	None.
<b>Boiling Point (°C):</b>	54°C (129°F) @ 1 atm.	<b>Flame Extension:</b>	None.
<b>Specific Gravity (Water=1):</b>	1.3 - 1.5 @ 20 °C	<b>Flash Point Method:</b>	Tag-Closed Cup.
<b>Vapor Density (air=1):</b>	7.0	<b>Auto Ignition Temperature (°C):</b>	Not Established



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### Section 9 • Physical and Chemical Properties - continued

<b>Vapor Pressure:</b>	38 kPa (at 25 °C)	<b>Partition Coefficient (octanol/water):</b>	<1
<b>Flammable limits (estimated):</b>	LOWER: N.E. UPPER: N.E.	<b>Viscosity:</b>	2 cm <sup>2</sup> /second @ 25°C
<b>pH:</b>	Not applicable		
<b>VOC Content:</b>	S.C.A.Q.M.D. Rule 102: C.A.R.B.:	0%, 0 g/L, 0 lbs./gal.(all ingredients are exempted materials) 67.5% (conforms to consumer regulations)	

### Section 10 • Stability and Reactivity

**Stability and Reactivity:** The product is stable.

**Incompatibility with Various Substances:** Incompatible with alkali or alkaline earth metals - powdered Al, Zn, Be, etc. Incompatible with oxidizing agents.

**Hazardous decomposition products:** High temperatures (open flames, glowing metal surfaces, etc.) can decompose the product to form hydrochloric and hydrofluoric acids, carbon dioxide, carbon monoxide and possibly carbonyl halides.

**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.

Ingredients	CASRN	LC-50	LD-50
1,3-Dichloro-1,1,2,2,3-pentafluoropropane	507-55-1	36800 ppm / rat	>2000mg/kg/dermal/rabbit >5000 mg/kg/oral/rat
1,1,1,2-Tetrafluoroethane	811-97-2	1500 gm/ m <sup>3</sup> /4 hr./rat	Not available
3,3 Dichloro-1,1,1,2,2-pentafluoropropane	422-56-0	37300 ppm/rat	>2000mg/kg/dermal/rabbit >5000 mg/kg/oral/rat
Acetone	67-64-1	50100 mg/m <sup>3</sup> /8 hr./rat	>5000 mg/kg rat



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### Section 12 • Ecological Information

#### Component Data: Acute Aquatic Toxicity

Component	CASRN	Test	Species	Results
1,3-Dichloro-1,1,2,2,3-pentafluoropropane	507-55-1		Not available	
1,1,1,2-Tetrafluoroethane	811-97-2		Not available	
3,3 Dichloro-1,1,1,2,2-pentafluoropropane	422-56-0		Not available	
Acetone	67-64-1	48-hour EC50	Daphnia magna	12700 mg/L

### Section 13 • Disposal Considerations

**Waste Status:** In its purchased form, this material is a RCRA hazardous waste carrying waste code D003 (pressurized container).

**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

Mode	Shipping Name	Hazard Class	Subclass	UN Number	Technical Name	Hazard Label	Packing Group	Emergency Response Guide
D.O.T. Ground	Consumer Commodity	ORM-D	NA	1950	NA	ORM-D	NA	NA
IATA	AEROSOLS, non-flammable	2.2	NA	1950	NA	Non-flammable Gas	NA	NA
IMDG	AEROSOLS	2	NA	1950	NA	NA	NA	F-D, S-U

### Section 15 • Regulatory information

**U.S. Federal Regulations:** TSCA 8(b) inventory: All of the ingredients are listed on the TSCA inventory or are exempt.

RCRA Hazardous Waste No.: D003 (aerosols)

CERCLA Sections 102a/103 Hazardous Substances (40 CFR part 370) Reportable Quantity: none

SARA TITLE III Sections 311/312 Hazardous Categorization (40 CFR part 370): Acute, Chronic, Sudden Release of Pressure

SARA TITLE III Section 313: CAS# 507-55-1 and 422-56-0.

**State Regulations:** New Jersey RTK: 1,3-Dichloro-1,1,2,2,3-pentafluoropropane (CASRN: 507-55-1), 1,1,1,2-Tetrafluoroethane (CASRN: 811-97-2) 3,3 Dichloro-1,1,1,2,2-pentafluoropropane (CASRN: 422-56-0), Acetone (CASRN: 67-64-1)

California Proposition 65: None.

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



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### Section 16 • Other Information

MSDS# 13416

Responsible Name:

Ed Williams

**Technical Manager**

#### HMIS (rev. 1996)

Health: 1\*

Flammability: 1

Reactivity: 0

#### HMIS III (rev. 2001)

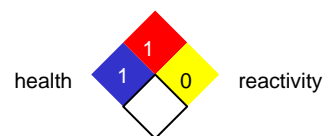
Health: [1]1\*

Flammability: 1

Physical Hazard: 2

#### NFPA

flammability



**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.

\*With regards to the previous designation of "2" for the HMIS health rating as represented on the product labels (revision dates 1/2003 and 10/2005), this was an error on our part. We mistakenly "overclassified" the rating. Per the supplier of HCFC-225, the HMIS health rating for this item is "1".

Ed Williams, Technical Manager  
 LPS Laboratories  
 A division of Illinois Tool Works

Form # 2699