MATERIAL SAFETY DATA SHEET

LPS Revo 66 Contact Cleaner

Section 1 • Product and Company Identification

Manufacturer's Name: LPS Laboratories

Trade Name: LPS Revo 66 Contact Cleaner

Part Numbers: 04416

Address:
4647 Hugh Howell Road
Tucker, GA USA 30085-5052

Chemical Family: Halogenated Hydrocarbon

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 Revo 66 Contact Cleaner is an aerosol remover of dirt, moisture, dust, flux, or 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 solvents that can be irritating to skin 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 vapor (it will dry out your nasal passages). Don't spray LPS Revo 66 Contact Cleaner for extended periods without adequate ventilation (if you breathe large amounts in poorly ventilated areas it can make you dizzy and even sick). 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 Revo 66 Contact Cleaner has no flash point and exhibits no flame extension when sprayed into an ignition source. However, it does contain some flammable ingredients. If a sufficient amount of material is sprayed into a confined area and allowed to partially evaporate, conditions for flammability could exist. Do not spray onto live electrical equipment (such as DC drive motors) or in or around ignition sources. Store product away from heat sources.

Disposal

If the aerosol container of LPS Revo 66 Contact Cleaner will not empty and contains 1 inch (2.5 cm) or more of liquid, it will fall under at least one hazardous waste classification. If the item is exhausted of its contents and is no longer pressurized, it is not considered a hazardous waste. Treat all spent aerosol containers appropriately. See section 13 for more details.

Section 2 • Hazards Identification

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

Emergency Overview: DANGER: Aerosol contents under pressure. Vapor harmful. Causes eye and skin irritation.

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

Potential Acute Health Effects:

Eyes Irritating to eyes. May cause frostbite upon extended direct contact.

Skin Repeated exposure may cause skin dryness or cracking. May cause frostbite upon extended direct contact.

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 frostbite upon extended direct contact. 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	Percent by Weight
1,1,1,2-Tetrafluoroethane	811-97-2	20 - 40
Trans-1,2-dichloroethylene	156-60-5	50 - 70
Isopropanol	67-63-0	1 - 5

The remaining ingredients of this preparation are not classified as toxic or highly toxic under the guidelines of 29 CFR 1910.1200 (“Subpart Z”).

Section 4 • First Aid Measures

Eyes: Check for and remove contact lenses. If irritation or redness develops, flush eyes with lukewarm, 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. If frostbite occurs, warm area with lukewarm water and 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. If frostbite occurs, warm area with lukewarm water and seek medical attention immediately.

Section 5 • Fire Fighting Measures

Products of Combustion: Hydrogen fluoride, hydrogen chloride, chlorine, carbon monoxide and carbon dioxide.
NFPA Class: Not classified.

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, autoignition 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.

Section 6 • Accidental Release Measures

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.

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	ACGIH - STEL	Other
1,1,1,2-Tetrafluoroethane	811-97-2	Not available	Not available	Not available	1,000 ppm WEEL (Supplier recommendation)
Trans-1,2-dichloroethylene	156-60-5	Not available	200 ppm	Not available	OEL-TWA-UK: 200 ppm OEL-STEL-UK: 250 ppm
Isopropanol	67-63-0	400 ppm	400 ppm	500 ppm	OEL-TWA-UK: 400 ppm OEL-STEL-UK: 500 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 : Use respirator with organic vapor cartridge if ventilation is inadequate.

Hands: Use PVA gloves.

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

Section 9 • Physical and Chemical Properties

Appearance:	Liquid under pressure.	**Color:**	Colorless / water-white
Odour/Taste:	Mild, ethereal.	**Aerosol Flame Extension**	None.
Solubility Description:	<5% by weight.		
Boiling Point (°C):	N/A	**Flammable limits (estimated):**	LOWER: Not available UPPER: Not available
Specific Gravity (Water=1):	1.2-1.3 @ 20 °C	**Flash Point (°C):**	None. (However, potential for "residual" flammability exists. Do not use on energized equipment. Read precautions on label.)
Vapour Density (air=1):	~3.0	**Flash Point Method:**	Tag-Closed Cup.
V.O.C. Content:	63.4%, 793 g/L, 6.61 #/gal	**Auto Ignition Temperature (°C):**	Not determined.
Evaporation Rate:	<1 (Ethyl Ether =1)	**Partition Coefficient (octanol/water):**	<1
Viscosity:	<<3 cSt @ 25°C	**Volatiles:**	100%

Section 10 • Stability and Reactivity

Stability and Reactivity: The product is stable.

Incompatibility with Various Substances: Extremely reactive or incompatible with oxidizing agents. Reacts violently with sodium, potassium, barium metal. Reacts with finely divided aluminum, zinc and magnesium.

Hazardous decomposition products: Thermal decomposition may yield hydrogen fluoride, hydrogen chloride, fluorine, chlorine, 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.

Ingredients	CASRN	LC-50	LD-50
1,1,1,2-Tetrafluoroethane	811-97-2	1500 gm/m^3/4 hr. rat	Not Available
Trans-1,2-dichloroethylene	156-60-5	24,100 ppm rat	1,235 mg/kg rat
Isopropanol	67-63-0	16,000 ppm / 8 hr. rat	5,045 mg/kg rat

Section 12 • Ecological Information

Component Data: Acute Aquatic Toxicity

Component	CASRN	Test	Species	Results
1,1,1,2-Tetrafluoroethane	811-97-2	Not available		
Trans-1,2-dichloroethylene	156-60-5	EC_{50}	Daphnia magna	50,050 ug/L
		EC_{50}	Pimephales promelas	81,267 ug/L
Isopropanol	67-63-0	24-hour EC_{50}	Daphnia magna	> 10,000 mg/L
		Toxicity Threshold	Chilomonas paramecium	104 mg/L

Section 13 • Disposal Considerations

Disposal: The dispensed liquid product is not a RCRA hazardous waste. (See 40 CFR Part 261.20 – 261.33). However, the non-empty aerosol itself has waste code D003 (reactivity: pressurized aerosol container) if it is unusable. Empty containers may be recycled. 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.

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LPS Revo 66 Contact Cleaner

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	NA	NA	ORM-D	NA	NAERG p. 126
IATA	AEROSOLS, non-flammable	2.2	NA	1950	NA	Non-flammable Gas	NA	NA
IMDG (Regular)	AEROSOLS, non-flammable	2.2	NA	1950	NA	Non-flammable Gas	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

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): Sudden Release of Pressure, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard.

SARA TITLE III Section 313: None.

State Regulations:

New Jersey RTK: Trans-1,2-dichloroethylene (CASRN: 156-60-5), 1,1,1,2-Tetrafluoroethane (CASRN: 811-97-2), (Nonafluorobutyl) methyl ether (CASRN: 163702-07-6), (Nonafluoroisobutyl) methyl ether (CASRN: 163702-08-7), Isopropanol (CASRN: 67-63-0)

California Proposition 65: None.

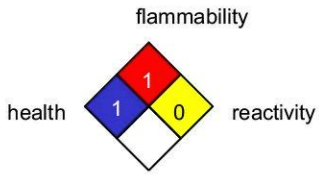
California and OTC States: This product is acceptable for consumer use.

Section 16 • Other Information

MSDS# 14416
Responsible Name: Ed Williams
Technical Manager

	HMIS
Health:	1
Flammability:	1
Reactivity:	0

NFPA



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

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