LPS LABORATORIES
MSDS
MATERIAL SAFETY DATA SHEET

Section 1 - Product Identification and Use

Manufacturer's Name:
LPS Laboratories

Trade Name:
LPS NoFlash Electro Contact Cleaner

Address (Number Street):
4647 Hugh Howell Road

Chemical Family:
Halogenated Hydrocarbon

Address (City, State, Zip):
Tucker, GA 30085-5052

Part Numbers:
04016

Telephone Number: 770-934-7800
Emergency Telephone Number: 1-800-424-9300 Chemtrec
Outside U.S.: (703) 527-3887

TSCA Inventory: All of the ingredients are listed on the TSCA inventory.
Hazardous Materials Description and proper shipping name (49 CFR 172.101):
Compound, Boiler, Preserving Liquid NMFC 50093 SUB 2 BRL/BXS CL55
CONSUMER COMMODITY ORM-D

HMIS Labeling:
Health: 2
Flammability: 1
Reactivity: 0

Section 2 - Hazardous Ingredients / Identity Information

Ingredients	CAS Numbers	%WW	OSHA PEL	ACGIH TLV	OTHER LIMITS
1,1-Dichloro-1-fluoroethane	1717-00-6	85-95	NE	NE	500 ppm WEEL*
Isopropyl Alcohol; Isopropanol	67-63-0	3-5	400 ppm	400 ppm	500 ppm STEL
Carbon Dioxide Propellant	124-38-9	3-5	10,000 ppm	5,000 ppm	30,000 ppm STEL

Recommend Workplace Environmental Exposure Level (WEEL) Established by American Industrial Hygiene Association (8-Hour Time Weighted Ave.)

Section 3 - Physical / Chemical Characteristics

Boiling point (F°): 95°
Vapor pressure @ 20° C: 10 psia
Vapor density (Air = 1): 4.0
Solubility in water: 5%
Specific gravity (H20 = 1): 1.21
Percent volatile by volume (%): 100
Evaporation rate (CCL4 = 1): >1
Appearance/odor: Clear, colorless liquid with mild, ethereal odor.

Section 4 - Fire and Explosion Hazard

Flash point (method used): None TCC. **Flammable limits:** **LEL:** 7.4 **UEL:** 15.5
Extinguishing media: Use water spray or fog, CO2, dry chemical, or water stream.
Special fire fighting procedures: Fire fighters should wear self-contained breathing apparatus approved by NIOSH due to toxicity of thermal decomposition products. Use water spray to keep containers cool.
Unusual fire and explosive hazards: Intensive heat created by fire will cause aerosols to burst.

N.E. = Not established
N.A. = Not applicable

Section 5 - Health Hazard Data

Primary route(s) of entry: Inhalation, skin.

Health hazard/effects of over exposure:

Inhalation: Respiratory irritation. High vapor concentrations including an oxygen deficient atmosphere in enclosed areas can affect the nervous system, and can cause headache, dizziness, drowsiness, cyanosis, unconsciousness, and death. In susceptible individuals, cardiac sensitization can result in potentially fatal heartbeat irregularities.

Eyes: Vapor and liquid can irritate eyes.

Skin: Prolonged or repeated skin contact can cause defatting and drying of skin. Contact with rapidly volatilizing liquid or cold vapors can cause frostbite or freeze burns to any tissue due to the cryogenic (extreme low temperature) effect of the product.

Ingestion: Ingestion of isopropanol can cause nausea, vomiting, abdominal pain and loss of consciousness.

Medical conditions aggravated by exposure: In persons with impaired cardiovascular function, inhalation of very high concentrations may result in cardiac arrhythmia.

Chemicals listed as potential carcinogen: **NTP:** No **IARC:** No **OSHA:** No

Emergency and first aid procedures:

Inhalation: Remove to fresh air. Call a physician. Give oxygen if indicated.

Eyes: Flush eyes with plenty of water. Get medical attention.

Skin: Wash with soap and water. Get medical attention

Ingestion: Do not induce vomiting, contact physician immediately. If conscious give one or two glasses of water to drink.

Note to physician: Product can cause cardiac muscle sensitization. Do not give adrenaline or similar drugs. Do not allow exposed person to exercise vigorously for 24 hours.

Results of Toxicity Studies on Dichlorofluoroethane (R-141 B):

Route:	**Animal**	**Data:**
Oral	Rat	LD50> 5 gm/kg
Dermal	Rat	LD50 > 2 gm/kg
Inhalation	Rat	4 Hr LC 50 = 62,000 ppm
Eye Irritant	Rabbit	Non-irritating to slightly irritating.
Skin Irritatant	Rabbit	Non-irritating (4-Hr. and 24 Hr. exposure).

Long term inhalation studies of up to 13 weeks duration at HCFC 141B concentrations up to 20,000 PPM resulted in minor changes in body weight and slight changes in blood chemistry in rats. Repeated inhalation of HCFC 141B vapors at levels up to 15,000 PPM for 16 weeks did not produce evidence of nervous system toxicity or behavioral effects in rats. Long-term inhalation (2-years) of high concentrations of HCFC 141B (5,000 and 20,000 PPM) caused an increase in the incidence of benign, not life-threatening tumors of the testes in rats. No exposure-related tumors were observed at 1,500 PPM in this study. No birth defects were noted in rabbits exposed to HCFC 141B by inhalation during pregnancy at levels up to 12,500 PPM; signs of maternal toxicity were noted at 4,200 PPM or above. No birth defects were noted in rats exposed to HCFC 141B by inhalation during pregnancy at levels up to 20,000 PPM; toxic effects were noted in the mothers and their offspring. In a reproduction study, reductions in litter size, total litter weight and growth rate were observed in rats exposed by inhalation to 20,000 PPM HCFC 141B for 2 generations. Delayed sexual maturity of male offspring from parents exposed to 8,000 and 20,000 PPM may have been related to the lower growth rate. HCFC 141B has generally produced no genetic changes in standard tests using animals (in vivo tests) and animal or bacterial cells. Metabolism studies in rats exposed by inhalation show that 141B is not metabolized or accumulated in the body to any significant extent.

Section 6 - Reactivity Data

Stability: Stable

Conditions to avoid: Avoid contact with open flame, electric arcs or other hot surfaces which can cause thermal decomposition.

Incompatibility (materials to avoid): Reacts violently with sodium, potassium, barium metal. Reacts with finely divided aluminum, zinc and magnesium. Strong oxidizers can accelerate decomposition.

Hazardous decomposition products: Thermal decomposition may yield hydrogen fluoride, hydrogen chloride, chlorine, carbon monoxide, and carbon dioxide.

Hazardous polymerization: Will not occur.

Section 7 - Precautions for Safe Handling and Use

Steps to be taken in case material is released or spilled: Evacuate the area, ventilate and avoid breathing vapors. Contain the spill. Remove leaking container and transfer product to another vessel. Clean up area by mopping or soak up with absorbent material. Place in closed containers. Do not flush to sewer.
Waste disposal methods: Recovered liquid may be sent to licensed reclaimer or incinerator. Consult federal, state and/or local disposal authorities for approved procedures.
RCRA Hazardous Waste No.: N/A
CERCLA Reportable Quantity: None.
SARA TITLE III Chemicals: 1,1-Dichloro-1-fluoroethane CAS #1717-00-6
Precautions to be taken in handling and storage: Store aerosols below 120ºF and above 32ºF. Store all materials in dry, well-ventilated area away from ignition sources. Avoid breathing vapors and prolonged skin contact. Vapors are heavier than air. Prolonged contact with aluminum parts in a pressurizable fluid system may cause violent reactions.

Section 8 - Control Measures

Respiratory Protection: None required if good ventilation is maintained. If vapor concentration rises above TLV, use NIOSH approved organic vapor cartridge respirator. For large spills or emergencies in completely enclosed areas, use self - contained breathing apparatus.
Ventilation: Ventilate low lying areas where vapors may collect. Provide local exhaust if TLV is exceeded.
Protective gloves: Use synthetic rubber gloves such as neoprene. Lined gloves are recommended for protection from cold.
Eye protection: For spraying or splashing of solvent, use face shield or goggles. Contact lenses should not be worn.
Other protective equipment: As necessary to prevent prolonged or repeated skin contact.
Work/hygienic practices: Wash hands with soap and water after use and/or before breaks, lunch and at the end of work periods. Remove contaminated clothing and launder before reuse.

Section 9 - Preparation Date of MSDS

The foregoing technical information and recommendations are compiled from sources that are believed to be accurate and reliable. However, they are supplied without warranty or guarantee of any kind either expressed or implied. The purchaser is responsible for selecting and determining the suitability of products for purchaser's particular needs and we disclaim any responsibility for improper applications or misuse of our products in any manner whatsoever.

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