MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name	**LPS® PSC Plastic Safe Cleaner**
Version #	01
Issue date	09-24-2012
CAS #	Mixture
Part Number	04620
Product use	An aerosol remover of dirt, moisture, dust, flux, or oxides from the internal components of electronic or precision.
Manufacturer information	LPS Laboratories, a division of Illinois Tool Works 4647 Hugh Howell Rd Tucker, GA 30084 United States www.lpslabs.com 1-800-241-8334 / 770-243-8800 Chemtrec 1-800-424-9300

2. Hazards Identification

Emergency overview	DANGER CONTENTS UNDER PRESSURE. Aerosol. Pressurized container may explode when exposed to heat or flame. HARMFUL OR FATAL IF SWALLOWED. Causes skin irritation. Causes eye irritation. Irritating to respiratory system. Prolonged exposure may cause chronic effects.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.
Eyes	Avoid contact with eyes. Causes eye irritation.
Skin	Avoid contact with the skin. Irritating to skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis. May cause frostbite.
Inhalation	Prolonged inhalation may be harmful. May cause irritation of respiratory tract. Avoid breathing dust/fume/gas/mist/vapors/spray.
Ingestion	Harmful if swallowed. Exposure by ingestion of an aerosol is unlikely. Components of the product may be absorbed into the body by ingestion. Do not ingest.
Target organs	Central nervous system. Eyes. Respiratory system. Skin.
Chronic effects	Conjunctiva. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Signs and symptoms	Corneal damage. Narcosis. Decrease in motor functions. Behavioral changes. Conjunctivitis. Irritating to mouth, throat, and stomach. Defatting of the skin. Skin irritation. Rash.
Potential environmental effects	Components of this product are hazardous to aquatic life. May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
1,2-TRANS-DICHLOROETHYLENE	156-60-5	2.5 - 10
Isopropanol	67-63-0	2.5 - 10
Other components below reportable levels		80 - 90

4. First Aid Measures

First aid procedures

Eye contact	Remove contact lenses, if present and easy to do. Rinse cautiously with water for several minutes. Get medical attention if irritation develops and persists.
Skin contact	Remove contaminated clothing. Wash off with soap and water. For minor skin contact, avoid spreading material on unaffected skin. Get medical attention if irritation develops and persists.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. Call a physician if symptoms develop or persist.
Ingestion	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Notes to physician	Symptoms may be delayed.
General advice	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If you feel unwell, seek medical advice (show the label where possible).

5. Fire Fighting Measures

Flammable properties	The product is not flammable. No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	Extinguishing media - small fires Dry chemical powder. Extinguishing media - large fires Foam, water spray or fog.
Protection of firefighters	
Protective equipment and precautions for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Fire fighting equipment/instructions	Containers should be cooled with water to prevent vapor pressure build up. Use water spray to cool unopened containers.
Specific methods	Cool containers exposed to flames with water until well after the fire is out.

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak. Keep out of low areas. Ventilate closed spaces before entering them.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
Methods for containment	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. Dike the spilled material, where this is possible. Move the cylinder to a safe and open area if the leak is irreparable. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Should not be released into the environment. Stop the flow of material, if this is without risk. Absorb in vermiculite, dry sand or earth and place into containers. Isolate area until gas has dispersed. Following product recovery, flush area with water. For waste disposal, see section 13 of the MSDS.

7. Handling and Storage

Handling	Pressurized container: Do not pierce or burn, even after use. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Ground and bond containers when transferring material. Do not use if spray button is missing or defective. Do not re-use empty containers. Do not get this material in contact with eyes. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin. Avoid contact with clothing. Wear personal protective equipment. Do not use in areas without adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Avoid release to the environment. Handle and open container with care.
Storage	Level 1 Aerosol. Contents under pressure. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Avoid exposure to long periods of sunlight. Store in a well-ventilated place. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
1,2-TRANS-DICHLOROETHYLENE (156-60-5)	TWA	200 ppm
Isopropanol (67-63-0)	STEL	400 ppm
	TWA	200 ppm

US. ACGIH. BEIs. Biological Exposure Indices

Components	Type	Value
Isopropanol (67-63-0)	BEI	40 mg/l

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
1,2-TRANS-DICHLOROETHYLENE (156-60-5)	PEL	790 mg/m3
		200 ppm
Isopropanol (67-63-0)	PEL	980 mg/m3
		400 ppm

Engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Eye / face protection Avoid contact with eyes. Wear safety glasses with side shields (or goggles). Eye wash fountain is recommended.

Skin protection Avoid contact with the skin. Wear appropriate chemical resistant clothing. Chemical resistant gloves.

Respiratory protection If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

General hygiene considerations Avoid contact with eyes. Avoid contact with skin. Avoid contact with clothing. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	Clear. Liquid.
Physical state	Gas.
Form	Aerosol.
Color	Colorless
Odor	Mild. Ether-like.
Odor threshold	Not available.
pH	Not available.
Vapor pressure	Not Determined
Vapor density	Not available.
Boiling point	Not Determined
Solubility (water)	< 5 % w/w
Specific gravity	1.34 @ 25°C
Relative density	Not available.
Flash point	None. Method: TCC
Flammability limits in air, upper, % by volume	Not available
Flammability limits in air, lower, % by volume	Not available
Auto-ignition temperature	Not Determined
VOC	30.6 % per California Consumer Product Regulations, 11.6% per other US State & Federal Consumer Product Regulations
Evaporation rate	> 1 (Ethyl Ether =1)

Viscosity	< 3 cSt @ 25°C
Percent volatile	100 %
Partition coefficient (n-octanol/water)	< 1
Other data	
Heat of combustion	< 20 kJ/g

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources.
Incompatible materials	Strong oxidizing agents. Reacts violently with sodium, potassium, barium metal. Reacts with finely divided aluminum, zinc and magnesium.
Hazardous decomposition products	At thermal decomposition temperatures, carbon monoxide and carbon dioxide. Chlorine. Hydrogen fluoride. Hydrogen chloride.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Local effects	Components of the product may be absorbed into the body through the skin. Irritating to respiratory system. Irritating to skin. Contact may irritate or burn eyes.
Chronic effects	Hazardous by OSHA criteria. Prolonged inhalation may be harmful. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged exposure may cause chronic effects.

Carcinogenicity

ACGIH Carcinogens

Isopropanol (CAS 67-63-0)	A4 Not classifiable as a human carcinogen.

Skin corrosion/irritation	Irritating to skin.
Neurological effects	Hazardous by OSHA criteria.
Further information	Symptoms may be delayed.

12. Ecological Information

Ecotoxicity	Contains a substance which causes risk of hazardous effects to the environment.
Environmental effects	Harmful to aquatic organisms. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	Not available.

Bioaccumulation / Accumulation

Bioaccumulative potential

Octanol/water partition coefficient log Kow

LPS® PSC Plastic Safe Cleaner	< 1
Isopropanol	0.05
1,2-TRANS-DICHLOROETHYLENE	2.06

Partition coefficient

LPS® PSC Plastic Safe Cleaner	< 1
Isopropanol	0.05
1,2-TRANS-DICHLOROETHYLENE	2.06

13. Disposal Considerations

Waste codes	D003: Waste Reactive material
Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

14. Transport Information

DOT

Basic shipping requirements:

UN number	UN1950
Proper shipping name	Aerosols
Hazard class	2.2
Special precautions	Read safety instructions, MSDS and emergency procedures before handling.

Additional information:

Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

IATA

UN number	UN1950
UN proper shipping name	Aerosols, non-flammable
Transport hazard class(es)	2.2
ERG code	2L

IMDG

UN number	UN1950
UN proper shipping name	Aerosols
Transport hazard class(es)	2.2

DOT

IATA; IMDG

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2)

Not regulated.

DEA Essential Chemical Code Number

Not regulated.

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Not regulated.

DEA Exempt Chemical Mixtures Code Number

Not regulated.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

1,2-TRANS-DICHLOROETHYLENE (CAS 156-60-5)	1.0 %
Isopropanol (CAS 67-63-0)	1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

1,2-TRANS-DICHLOROETHYLENE (CAS 156-60-5)	Listed.
Isopropanol (CAS 67-63-0)	Listed.

CERCLA (Superfund) reportable quantity

1,2-TRANS-DICHLOROETHYLENE: 1000.0000
Isopropanol: 100.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - Yes Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

US - New Jersey RTK - Substances: Listed substance

1,2-TRANS-DICHLOROETHYLENE (CAS 156-60-5)	Listed.
Isopropanol (CAS 67-63-0)	Listed.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

1,2-TRANS-DICHLOROETHYLENE (CAS 156-60-5)	Listed.
Isopropanol (CAS 67-63-0)	Listed.

16. Other Information

Further information	HMIS® is a registered trade and service mark of the NPCA.
HMIS® ratings	Health: 2* Flammability: 2 Physical hazard: 2
NFPA ratings	Health: 1 Flammability: 1 Instability: 0
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available.
This data sheet contains changes from the previous version in section(s):	Product and Company Identification: Product Uses Composition / Information on Ingredients: Ingredients Physical & Chemical Properties: Multiple Properties Transport Information: Proper Shipping Name/Packing Group Regulatory Information: United States