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

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

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-TRANS-DICHLOROETHYLENE</td>
<td>156-60-5</td>
<td>2.5 - 10</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>67-63-0</td>
<td>2.5 - 10</td>
</tr>
<tr>
<td>Other components below reportable levels</td>
<td></td>
<td>80 - 90</td>
</tr>
</tbody>
</table>
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
Extinguishing media - small fires Dry chemical powder. Extinguishing media - large fires Foam, water spray or fog.

Protection of firefighters
Firefighters should wear full protective clothing including self contained breathing apparatus.

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.
8. Exposure Controls / Personal Protection

**Occupational exposure limits**

### US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-TRANS-DICHLOROETHYLINE (156-60-5)</td>
<td>TWA</td>
<td>200 ppm</td>
</tr>
<tr>
<td>Isopropanol (67-63-0)</td>
<td>STEL</td>
<td>400 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>200 ppm</td>
</tr>
</tbody>
</table>

### US. ACGIH. BEIs. Biological Exposure Indices

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropanol (67-63-0)</td>
<td>BEI</td>
<td>40 mg/l</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-TRANS-DICHLOROETHYLINE (156-60-5)</td>
<td>PEL</td>
<td>790 mg/m³</td>
</tr>
<tr>
<td>Isopropanol (67-63-0)</td>
<td>PEL</td>
<td>200 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>980 mg/m³</td>
</tr>
</tbody>
</table>

### 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.
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-DICHLOOROETHYLENE 2.06
Partition coefficient
LPS® PSC Plastic Safe Cleaner < 1
Isopropanol 0.05
1,2-TRANS-DICHLOOROETHYLENE 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

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)

<table>
<thead>
<tr>
<th>Hazard categories</th>
<th>Immediate Hazard</th>
<th>Delayed Hazard</th>
<th>Fire Hazard</th>
<th>Pressure Hazard</th>
<th>Reactivity Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-TRANS-DICHLOROETHYLENE</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Section 302 extremely hazardous substance: No
Section 311 hazardous chemical: No

Inventory status

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

* 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