



SAFETY DATA SHEET

LPS CFC Free (Bulk Liquid)

Revision Date: September 24, 2010

Supersedes: May 29, 2007

Section 1 – Identity of the Substance/Preparation and Company/Undertaking

Product Name: LPS CFC FREE (Bulk Liquid)

Part Numbers: M31005, M31025, M31205

Product Use: A solvent cleaner designed to remove grease, oil, dirt and other residues from electrical contacts on printed circuit boards and other electrical devices.

Supplier: Geocel Limited, Western Wood Way, Langage Science Park, Plympton, Plymouth, PL7 5BG United Kingdom

TEL: +44 (0)1752 202060

FAX: +44 (0)1752 334384

In Case of Emergency: +001 703-527-3887

Manufacturer: LPS Laboratories, 4647 Hugh Howell Rd., Tucker, GA 30085 (U.S.A.)
<http://www.lpslabs.com>

Section 2 – Hazards Identification

Human and Environmental Hazards This preparation is considered hazardous according to European Union Directives 67/548/EEC and 1999/45/EC. This product will combust when subjected to ignition sources. Do not spray on a naked flame or any incandescent material.

Highly flammable. Irritating to eyes and skin. Very toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment. Vapours may cause drowsiness and dizziness.

Section 3 – Composition / Information on Ingredients

INGREDIENT NAME	EC No.	CASRN	Classification	Weight Percent
2-methylpentane	203-523-4	107-83-5	[F] R11; [Xi] R38, R67; [N] R50/53; [Xn] R65	35 - 45%
3-methylpentane	202-481-4	96-14-0	F] R11; [Xi] R38, R67; [N] R50/53; [Xn] R65	15 - 25%
2,3-dimethylbutane	201-193-6	79-29-8	F] R11; [Xi] R38, R67; [N] R50/53; [Xn] R65	10 - 20%
2,2-dimethylbutane	200-906-8	75-83-2	F] R11; [Xi] R38, R67; [N] R50/53; [Xn] R65	10 - 20%
Isopropanol	200-661-7	67-63-0	[F] R11; [Xi] R36, R67	5 - 15%
n-Hexane	203-777-6	110-54-3	R52/53	1 - 3%



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Section 4 – First Aid Measures

- Eyes:** Liquid contact may cause irritation. Flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention if irritation persists.
- 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:** If inhaled, remove to fresh air. If breathing is difficult, give oxygen and get medical attention. If not breathing, give artificial respiration and get medical attention.
- 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.

Section 5 – Fire Fighting Measures

Products of Combustion: Carbon monoxide and carbon dioxide.

General Fire Hazards: High heat will cause product to boil, evolving vapour that could cause explosive rupture of closed containers.

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: See sections 6, 7, 8 and 15.

Protection Clothing (Fire): wear protective clothing and equipment suitable for the surrounding fire, including helmet, face mask, and self-contained breathing apparatus.

Section 6 – Accidental Release Measures

Precautions to protect environment: Do not allow entry into drains or watercourses. If this occurs inform the local authorities at once.

Spill Cleanup methods: Eliminate all sources of ignition and ventilate area. Use an absorbent material, e.g. sand, to mop up residues. See section 13 'Disposal Considerations'.



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Section 7 – Handling and Storage

Storage Precautions: Keep in original container at ambient temperatures. Keep container closed.

Section 8 – Exposure Controls / Personal Protection

Ingredients	EC No.	UK LT EXP (8 hrs.)	UK ST EXP (15 min.)	Other Limits
2-methylpentane	203-523-4	Not Established	Not Established	500 ppm TLV (ACGIH) 1000 ppm STEL (ACGIH)
3-methylpentane	202-481-4	Not Established	Not Established	500 ppm TLV (ACGIH) 1000 ppm STEL (ACGIH) MAK: 200 ppm, 720 mg/m ³
2,3-dimethylbutane	201-193-6	Not Established	Not Established	500 ppm TLV (ACGIH) 1000 ppm STEL (ACGIH)
2,2-dimethylbutane	200-906-8	Not Established	Not Established	Not Established
Isopropanol	200-661-7	400 ppm	500 ppm	400 ppm (ACGIH) 500 ppm STEL (ACGIH)
n-Hexane	203-777-6	20 ppm	Not Established	50 ppm TLV (ACGIH)

Engineering measures Normal room ventilation is usually adequate. If necessary, use appropriate local exhaust ventilation to keep exposures below the regulated limits.

Personal protective equipment

Eye protection Safety glasses with side shields conforming to appropriate regulations. Eye wash fountain and emergency shower facilities are recommended.

Hand protection Normally no hand protection is required; however, if product will be sprayed for an extended period, "overspray" onto skin may occur. If so, use protective gloves conforming to appropriate regulations. Please observe the instructions regarding permeability and breakthrough time that are provided by the supplier of the gloves. Take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion and the contact time.

Respiratory protection Typical use of this product under normal conditions does not require the use of respiratory protection. If extended spraying of product will be made under poor ventilation, use appropriate organic vapor filtering respirators.

Hygiene measures Do not soak clothing with this product and continue working without immediately changing clothes and washing skin. Do not reuse clothing until it has been laundered. An eyewash fountain should be available in the work area.

Environmental exposure controls Soak up puddles of product (from a crushed or ruptured aerosol) with absorbent material and dispose of according to local regulations. Ventilate area to reduce worker exposure to vapours and prevent accumulation of explosive vapour concentrations.



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Section 9 – Physical and Chemical Properties

Appearance:	Liquid	Colour:	Clear, Colorless
Odour:	Mild (or faint) alcohol	Evaporation Rate:	< 1 (Ethyl Ether = 1)
Solubility Description:	<10% by weight	Flash Point:	< -17°C(1.4°F)
Boiling Point:	60.5°C/ 141°F	Flash Point Method:	Tag-Closed Cup
Specific Gravity (H₂O=1):	0.65 – 0.68 @ 20 °C	Decomposition Temperature:	Not Established
Vapor Density (air = 1):	~3.0	Auto ignition temperature:	306°C(583°F)
Vapor Pressure:	47 kPa @ 20°C	Flammable limits (estimated):	LOWER: 0.6% UPPER: 7.0%
Melting Point:	Not Established	Partition Coefficient (octanol/water):	<1
pH:	Not Established	Odor Threshold:	Not Established
Heat of combustion:	Not Established	Viscosity:	< 3cSt @ 25 °C
Volatiles:	100%		

Section 10 – Chemical Stability and Reactivity

Chemical Stability:	Product is stable under recommended storage conditions.
Conditions to Avoid:	Exposure to direct sunlight for extended periods. Temperatures in excess of 50°C.
Incompatibility:	Reactive or incompatible with oxidizing agents.
Hazardous Decomposition:	Combustion will generate smoke, possibly thick and choking, resulting in zero visibility and combustion products include carbon monoxide and carbon dioxide.
Hazardous Polymerization:	Will not occur.

Section 11 – Toxicological Information

Acute and Chronic Toxicity

A: General Product Information

An acute toxicity study of this product has not been conducted. Information given in this section relates only to individual constituents contained in this preparation.

B: Component Analysis

Ingredients	EC No.	LC-50	LD-50
2-methylpentane	203-523-4	> 3125 ppm / 4 hours/rat*	Not available
3-methylpentane	202-481-4	Not Established	Not Established
2,3-dimethylbutane	201-193-6	Not Established	Not Established
2,2-dimethylbutane	200-906-8	Not Established	Not Established
Isopropanol	200-661-7	16000 ppm	5045 mg/kg oral/rat* 5030 – 7900 dermal/rat*
n-Hexane	203-777-6	48000 ppm 4 hours/rat*	25 g/kg oral/rat* 1.3 g/kg dermal/rabbit*



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Section 12 – Ecological Information

Mobility: Volatile. Readily absorbed into soil. **Persistence and degradability:** Only slightly biodegradable.

Bioaccumulative potential: Minimal bioaccumulation potential **Other adverse effects:** None known.

Component Information

Acute Aquatic Toxicity

Effect on Organisms	Component	EC No.	Test	Species	Results
Acute Toxicity on Fishes	Isopropanol	200-661-7	48-hour EC50	Pimephales promelas	> 10000 mg/L
	n-Hexane	203-777-6	96-hour LC50	Lepomis macrochirus	4.12 mg/L
Acute Toxicity on Daphnia	2-methylpentane	203-523-4	48-hour EC50	Daphnia magna	2,1 mg/L
	n-Hexane	203-777-6	48-hour EC ₅₀	Water flea	3.87 mg/L
Bacterial inhibition	No Data Available				
Growth inhibition of algae	2-methylpentane	203-523-4	96-hour LC50	Microcystis pyrifera	10 mg/L
Bioaccumulation in fish					

Section 13 – Disposal Considerations

Disposal: Waste must be disposed of in accordance with national 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.

Section 14 – Transportation Information

Road/Rail - ADR/RID	UN no:	1993	ADR Class:	3
	Packing group:	II	Classification code:	F1
	Name and Description:	Flammable Liquid, n.o.s.	Hazard ID no:	33
	Labeling:	3	Technical Name:	Hexanes, Isopropanol
IMDG-IMO	UN no:	1993	Class:	3
	Shipping Name:	Flammable Liquid, n.o.s.	Subsidiary Risk:	NA
	Marine pollutant:	P001	Packing group:	II
	Technical Name:	Hexanes, Isopropanol	EmS:	F-E, <u>S-E</u>
IATA-ICAO *See note below	UN no:	1993	Class:	3
	Shipping Name:	Flammable Liquid, n.o.s.	Subclass	NA
	Packing group:	II	Packing instructions:	305, Y305 (Ltd. Qty.), 307 (CAO)
	Labeling:	Flammable Liquid	Technical Name:	Hexanes, Isopropanol

***Note: For air shipments only**

1-gallon containers shipped in case quantity (4 to a case), must be shipped via **“Cargo Aircraft Only”** (CAO).
 5-gallon containers must be shipped via **“Cargo Aircraft Only”** (CAO).
 55-gallon drums **CANNOT** be shipped by air.



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Section 15 – Regulatory Information

Warning Symbol(s):   

Risk Phrases:

R-11	Highly Flammable
R-36/38	Irritating to eyes and skin.
R-51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R-65	Harmful: may cause lung damage if swallowed.
R-67	Vapours may cause drowsiness and dizziness.

Safety Phrases:

S-2	Keep out of the reach of children.
S-9	Keep container in a well-ventilated place.
S-16	Keep away from sources of ignition -- No smoking.
S-24/25	Avoid contact with skin and eyes.
S-26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S-33	Take precautionary measures against static discharges.
S-60	This material and its container must be disposed of as hazardous waste.
S-61	Avoid release to the environment. Refer to special instructions/safety data sheets.

Section 16 – Other Information

User Notes: The purpose of the above information is to describe this product only in terms of Health and Safety requirements. The information given therefore should not be construed as guaranteeing specific properties or specification. Customers should satisfy themselves as to the suitability and completeness of this information for their own particular use, bearing in mind any other Health and Safety legislation or regulations. The information and recommendations in this publication are to the best of our knowledge reliable. However, nothing herein is construed as a warranty or representation. Statements concerning the use of the products described herein are not to be construed as recommending the infringement of any patent and no liability for infringement arising out of any such use is to be assumed.

Information Sources: ESIS: European Chemical Substances Information
HSE EH40 Occupation Exposure Limits. Suppliers Safety Data Sheets.

Full R-Phrases

R-11	Highly Flammable
R-36	Irritating to eyes
R-38	Irritating to the skin.
R-51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R-52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R-65	Harmful: may cause lung damage if swallowed.
R 67	Vapours may cause drowsiness and dizziness.