



MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Material name	LPS® CFC Free
Recommended use	A fast drying industrial cleaning solvent designed to remove soil and other contaminants.
Version #	01
CAS #	Mixture
Part Number	03101, 03105, 03155
Supplier Name	MRO Chem Pty Ltd
Address	Level 19, 644 Chapel Street, South Yarra, Vic 3141, Australia. Tel: +61 (3)9823 6273 Website: http://www.mrochem.com.au
In Case of Emergency	(Australia) +61 (4)3448 1129 (US) +1 703-527-3887
Manufacturer	
Company name	LPS Laboratories, a division of Illinois Tool Works, Inc.
Address	4647 Hugh Howell Rd., Tucker, GA 30084 (U.S.A.)
Website	http://www.lpslabs.com
E-mail	sds@lpslabs.com

2. HAZARDS IDENTIFICATION

HAZARDOUS SUBSTANCE. DANGEROUS GOODS. This preparation is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification	F;R11, Xn;R65, Xi;R36-38, R67, N;R51/53
Risk phrase(s)	R11 Highly flammable. R36 Irritating to eyes. R38 Irritating to skin. R65 Harmful: may cause lung damage if swallowed. R67 Vapors may cause drowsiness and dizziness. R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety phrase(s)	S2 Keep out of the reach of children. S9 Keep container in a well-ventilated place. S16 Keep away from sources of ignition - No smoking. S23 Do not breathe gas/fumes/vapor/spray. S24/25 Avoid contact with skin and eyes. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S29 Do not empty into drains. S57 Use appropriate container to avoid environmental contamination. S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS #	Percent
2-Methylpentane	107-83-5	30 - 60
2,2-Dimethylbutane	75-83-2	10 - < 30
2,3-Dimethylbutane	79-29-8	10 - < 30
3-Methylpentane	96-14-0	10 - < 30
Isopropanol	67-63-0	10 - < 30
N-hexane	110-54-3	< 10
Other components below reportable levels		< 10

4. FIRST AID MEASURES

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a physician if symptoms develop or persist.
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Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or Poison Control Center immediately.
Ingestion	Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
General advice	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Wash contaminated clothing before reuse.
Notes to physician	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO ₂).
Extinguishing media which must not be used for safety reasons	Do not use water jet as an extinguisher, as this will spread the fire.
Unusual fire & explosion hazards	Heat may cause the containers to explode.
Specific hazards	Fire may produce irritating, corrosive and/or toxic gases.
Special protective equipment for fire-fighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Structural firefighters protective clothing will only provide limited protection.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk. In the event of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
HAZCHEM code	None

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Keep unnecessary personnel away. Keep out of low areas. Keep upwind. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapors and spray mists. Ventilate closed spaces before entering them. For personal protection, see section 8 of the MSDS.
Environmental precautions	Avoid release to the environment. Refer to special instructions/safety data sheets. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.
Containment procedures	Refer to attached safety data sheets and/or instructions for use. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	<p>Extinguish all flames in the vicinity. Should not be released into the environment. Prevent product from entering drains.</p> <p>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Do not allow material to contaminate ground water system. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Use foam to blanket spilled material. Following product recovery, flush area with water.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills in original containers for re-use. This material and its container must be disposed of as hazardous waste. For waste disposal, see section 13 of the MSDS.</p>

7. HANDLING AND STORAGE

Handling	<p>May be ignited by open flame. Keep away from sources of ignition - No smoking.</p> <p>Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure.</p> <p>Use appropriate container to avoid environmental contamination.</p>
Storage	<p>Do not handle or store near an open flame, heat or other sources of ignition. Prevent electrostatic charge build-up by using common bonding and grounding techniques.</p> <p>Use appropriate container to avoid environmental contamination. Store in a well-ventilated place.</p>

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
2,2-Dimethylbutane (CAS 75-83-2)	STEL	1000 ppm
	TWA	500 ppm
2,3-Dimethylbutane (CAS 79-29-8)	STEL	1000 ppm
	TWA	500 ppm
2-Methylpentane (CAS 107-83-5)	STEL	1000 ppm
	TWA	500 ppm
3-Methylpentane (CAS 96-14-0)	STEL	1000 ppm
	TWA	500 ppm
Isopropanol (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm
N-hexane (CAS 110-54-3)	TWA	50 ppm

Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment)

Components	Type	Value
Isopropanol (CAS 67-63-0)	STEL	1230 mg/m ³
	TWA	500 ppm
		983 mg/m ³
		400 ppm
N-hexane (CAS 110-54-3)	TWA	72 mg/m ³
		20 ppm

Recommended monitoring procedures

Additional exposure data Not available.

US ACGIH Threshold Limit Values: Skin designation

N-hexane (CAS 110-54-3) Can be absorbed through the skin.

Engineering measures to reduce exposure

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

Respiratory protection

No personal respiratory protective equipment normally required. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Hand protection

For prolonged or repeated skin contact use suitable protective gloves. Chemical resistant gloves are recommended.

Eye protection

Wear safety glasses with side shields (or goggles). Eye wash fountain is recommended.

Skin and body protection

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

General

Use personal protective equipment as required.

Environmental exposure controls

Environmental manager must be informed of all major releases.

Hygiene measures

When using do not smoke. Wash hands after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid.
Physical state	Liquid.
Form	Liquid.
Color	Clear water-white
Odor	Solvent.
Odor threshold	Not available.
pH	Not available.
Vapor pressure	352.53 mm Hg @ 38°C
Vapor density	~3 (air = 1)

Boiling point	140.9 °F (60.5 °C) dispensed liquid
Melting point/Freezing point	Not available.
Solubility (water)	< 10 % w/w
Specific gravity	0.64 - 0.67 @ 20°C
Flash point	< 1.40 °F (< -17.00 °C) Tag Closed Cup
Flammability limits in air, upper, % by volume	7 %
Flammability limits in air, lower, % by volume	0.6 %
Auto-ignition temperature	582.8 °F (306 °C)
VOC	100 % per U.S, State and Federal Consumer Product Regulations; 669 g/L per SCAQMD Rule 102
Evaporation rate	< 1 (Ethyl Ether = 1)
Viscosity	< 3 cSt @ 25°C
Percent volatile	100 %
Partition coefficient (n-octanol/water)	< 1
Other data	
Flammability (solid, gas)	Flammable gas.
Heat of combustion	> 30 kJ/g

10. STABILITY AND REACTIVITY

Chemical stability	Instability caused by elevated temperatures. Risk of ignition.
Conditions to avoid	Heat, flames and sparks. Avoid temperatures exceeding the flash point.
Materials to avoid	The product is stable and non-reactive under normal conditions of use, storage and transport. Avoid contact with oxidizing agents (e.g. nitric acid, peroxides and chromates).
Hazardous decomposition products	Carbon oxides.
Hazardous polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological data

Components	Species	Test Results
Isopropanol (CAS 67-63-0)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	12800 mg/kg
<i>Oral</i>		
LD50	Dog	4797 mg/kg
	Mouse	3600 mg/kg
		4.5 g/kg
	Rabbit	6410 mg/kg
		5.03 g/kg
	Rat	5045 mg/kg
		4.7 g/kg
<i>Other</i>		
LD50	Mouse	1509 mg/kg
	Rat	1099 mg/kg
N-hexane (CAS 110-54-3)		
Acute		
<i>Inhalation</i>		
LC50	Mouse	48000 mg/l, 4 Hours
<i>Oral</i>		
LD50	Rat	24 mg/kg

Components	Species	Test Results
	Wistar rat	49 mg/kg
* Estimates for product may be based on additional component data not shown.		
Acute toxicity	Based on available data, the classification criteria are not met.	
Routes of exposure	Eye contact. Skin contact. Inhalation. Ingestion.	
Chronic toxicity	Prolonged exposure may cause chronic effects. Causes damage to organs through prolonged or repeated exposure.	
Sensitization	Based on available data, the classification criteria are not met.	
Carcinogenicity	Based on available data, the classification criteria are not met.	
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Reproductivity	Suspected of damaging fertility. Suspected of damaging the unborn child.	
Epidemiology	No epidemiological data is available for this product.	
Local effects	Irritating to eyes and skin. Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.	
Symptoms and target organs	Skin irritation. Defatting of the skin. Irritating to eyes and respiratory system. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.	
Further information	Symptoms may be delayed.	

12. ECOLOGICAL INFORMATION

Ecotoxicological data

Components	Species	Test Results
Isopropanol (CAS 67-63-0)		
Aquatic		
Fish	LC50	Bluegill (<i>Lepomis macrochirus</i>) > 1400 mg/l, 96 hours
N-hexane (CAS 110-54-3)		
Aquatic		
Fish	LC50	Fathead minnow (<i>Pimephales promelas</i>) 2.101 - 2.981 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Ecotoxicity Toxic to aquatic life with long lasting effects.

Persistence and degradability Not inherently biodegradable.

Bioaccumulation

Bioaccumulative potential

Octanol/water partition coefficient log Kow

LPS® CFC Free	< 1
2,2-Dimethylbutane	3.82
2,3-Dimethylbutane	3.42
2-Methylpentane	3.74
3-Methylpentane	3.6
Isopropanol	0.05
N-hexane	3.9

Environmental effects Toxic to aquatic organisms.

Aquatic toxicity Toxic to aquatic organisms.

13. DISPOSAL CONSIDERATIONS

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not discharge into drains, water courses or onto the ground. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in accordance with all applicable regulations.

Waste from residues / unused products Dispose of in accordance with local regulations. Avoid discharge into water courses or onto the ground.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

ADG

UN number UN1993
Proper shipping name FLAMMABLE LIQUID (Hexanes and Isopropanol)
Hazard class 3
Packing group II
Hazard ID D3YE

IATA

UN number UN1993
Proper shipping name Flammable liquid (Hexanes and Isopropanol)
Hazard class 3
Packing group II
Special precautions DOT Regulated Marine Pollutant. IMDG Regulated Marine Pollutant.
ERG code 3H

IMDG

UN number UN1993
Proper shipping name FLAMMABLE LIQUID (Hexanes and Isopropanol), MARINE POLLUTANT
Hazard class 3
Packing group II
EmS F-E, S-E
Environmental hazards
Marine pollutant Yes
Special precautions DOT Regulated Marine Pollutant. IMDG Regulated Marine Pollutant.

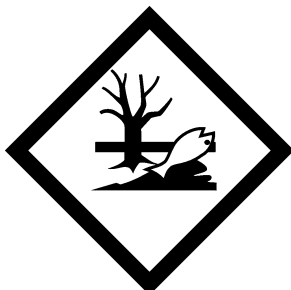
ADG



IATA; IMDG



Marine pollutant



HAZCHEM code

None

General

DOT Regulated Marine Pollutant. IMDG Regulated Marine Pollutant.

15. REGULATORY INFORMATION

National regulations

This Material Safety Data Sheet was prepared in accordance with the Australia National Code of Practice for the Preparation of Material Safety Data Sheets (NOHSC: 2011.)

Australia HVIC: Listed substance

Isopropanol (CAS 67-63-0)

Listed.

N-hexane (CAS 110-54-3)

Listed.

Australia Medicines & Poisons Schedule 5: Use/Concentration/Exceptions

N-hexane (CAS 110-54-3)

Exception may apply, see the regulation for relevance.

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)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
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 this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. OTHER INFORMATION

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Issue date

05-10-2013