



SAFETY DATA SHEET

According to Safe Work Australia Code of Practice on Preparation of Safety Data Sheets for Hazardous Chemicals

SDS # : 32897

LHM PLUS

Issuing date: 2016-12-30

Revision Date: 2017-11-01

Version 1.02

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Product identifier

Product name LHM PLUS

Other means of identification

Number 529
Substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Identified uses Hydraulic oil, Brake fluid.
Uses advised against Do not use for any purpose other than the one for which it is intended.

Details of the supplier of the safety data sheet

Supplier Total Oil Australia Pty Ltd (ABN 15 149 501 922)
Level 1, 415 Riversdale Road, Hawthorn East
Victoria 3123
AUSTRALIA
Tel: +61 (03)9861 8600
Fax: +61 (03) 9882 0447

For further information, please contact:

Contact Point HSE
E-mail Address ms.ap-sds@total.com

Emergency telephone

Australia: +61 2 8014 4558
Asia-Pacific: +65 3158 1074

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classified as hazardous according to Australia Model Work Health and Safety Regulations

Aspiration toxicity - Category 1

GHS Label elements, including precautionary statements

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Signal word

DANGER**Hazard Statements**

H304 - May be fatal if swallowed and enters airways

Precautionary Statements - Response

- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- Do NOT induce vomiting

Precautionary Statements - Storage

- Store locked up

Precautionary Statements - Disposal

- Dispose of contents/ container to an approved waste disposal plant

Other hazards which do not result in classification

Physical-Chemical Properties
Environmental properties

Contaminated surfaces will be extremely slippery
 The product may form an oil film on the water surface that may stop the oxygen exchange.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	EC-No	Weight %
Distillates (petroleum), hydrotreated light paraffinic	64742-55-8	265-158-7	40-<50
Hydrocarbons, C13-C16, n-alkanes, isoalkanes, cyclics, < 0.03% aromatics	^	934-954-2	40-<50
Gas oils (petroleum), hydrodesulfurized	64742-79-6	265-182-8	5-<10
tris(methylphenyl) phosphate	1330-78-5	215-548-8	0.1-<0.25

Additional information

Product containing mineral oil with less than 3% DMSO extract as measured by IP 346

4. FIRST AID MEASURES**Description of necessary first-aid measures****General advice**

IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.

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Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. High pressure jets may cause skin damage. Take victim immediately to hospital.
Inhalation	Remove casualty to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration.
Ingestion	Clean mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately. Do not ingest. If swallowed then seek immediate medical assistance.
Protection of First-aiders	First aider needs to protect himself. See Section 8 for more detail. Do not use mouth-to-mouth method if victim ingested or 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.

Most important symptoms/effects, acute and delayed

Skin contact	Not classified based on available data. High pressure injection of the products under the skin may have very serious consequences even though no symptom or injury may be apparent.
Eye contact	Not classified based on available data.
Inhalation	Not classified based on available data. Inhalation of vapors in high concentration may cause irritation of respiratory system.
Ingestion	May be fatal if swallowed and enters airways. If swallowed accidentally, the product may enter the lungs due to its low viscosity and lead to the rapid development of very serious pulmonary lesions (medical survey during 48 hours). Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Suitable Extinguishing Media Carbon dioxide (CO₂). ABC powder. Foam. Water spray or fog.

Unsuitable Extinguishing Media Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Special Hazard Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot. These may be highly dangerous if inhaled in confined spaces or at high concentration. Combustion

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products include sulphur oxides (SO₂ and SO₃) and Hydrogen sulphide H₂S. Mercaptans. Nitrogen oxides (NO_x). Phosphorous oxides.

Advice for fire-fighters

Special protective equipment for fire-fighters Wear self-contained breathing apparatus and protective suit.

Other information

Cool containers / tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

General Information Do not touch or walk through spilled material. Contaminated surfaces will be extremely slippery. Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.

Environmental precautions

General Information Do not allow material to contaminate ground water system. Prevent entry into waterways, sewers, basements or confined areas. Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up

Methods for containment Dike to collect large liquid spills. If necessary dike the product with dry earth, sand or similar non-combustible materials.

Methods for cleaning up Dispose of contents/container in accordance with local regulation. In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Other information

Personal Protective Equipment See Section 8 for more detail.

Waste treatment See section 13.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling For personal protection see section 8. Use only in well-ventilated areas. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing.

Prevention of fire and explosion Take precautionary measures against static discharges. Ground/bond containers, tanks

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and transfer/receiving equipment.

Hygiene measures

Ensure the application of strict rules of hygiene by the personnel exposed to the risk of contact with the product. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Provide regular cleaning of equipment, work area and clothing. Do not use abrasives, solvents or fuels. Do not dry hands with rags that have been contaminated with product. Do not put product contaminated rags into workwear pockets.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

Keep away from food, drink and animal feedingstuffs. Keep in a bunded area. Keep container tightly closed. Keep preferably in the original container. Otherwise reproduce all indication of the regulation label on the new container. Do not remove the hazard labels of the containers (even if they are empty). Design the installations in order to avoid accidental emissions of product (due to seal breakage, for example) onto hot casings or electrical contacts. Store at room temperature. Protect from moisture.

Materials to Avoid

Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits

Mineral oil mist:
USA: OSHA (PEL) TWA 5 mg/m³, NIOSH (REL) TWA 5 mg/m³, STEL 10 mg/m³, ACGIH (TLV) TWA 5 mg/m³ (highly refined).

Appropriate engineering controls

Engineering Measures

Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Individual protection measures, such as personal protective equipment (PPE)

Personal Protective Equipment

General Information

Protective engineering solutions should be implemented and in use before personal protective equipment is considered. The personal protective equipment (PPE) recommendations apply to the product ITSELF. In case of mixtures or formulations, it is suggested that you contact the relevant PPE suppliers.

Respiratory protection

None under normal use conditions. When workers are facing concentrations above the

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exposure limit they must use appropriate certified respirators. Respirator with combination filter for vapour/particulate (EN 14387): Type A/P1. Warning ! filters have a limited use duration. The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.

Eye Protection	If splashes are likely to occur, wear: Safety glasses with side-shields. EN 166.
Skin and body protection	Wear suitable protective clothing. Protective shoes or boots. Long sleeved clothing. Type 4/6.
Hand Protection	Hydrocarbon-proof gloves: Fluorinated rubber, Nitrile rubber. In case of prolonged contact with the product, it is recommended to wear gloves complying with EN 420 and EN 374 standards, protecting at least for 480 minutes and having a thickness of 0,38 mm at least. These values are indicative only. The level of protection is provided by the material of the glove, its technical characteristics, its resistance to the chemicals to be handled, the appropriateness of its use and its replacement frequency. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance		limpid	
Color		Fluorescent yellowish-green	
Physical State @20°C		liquid	
Odor		Characteristic	
Odor Threshold		No information available	
Property	Values	Remarks	Method
pH		Not applicable	
Melting point/range		No information available	
Boiling point/boiling range		No information available	
Flash point	105 °C 221 °F		ASTM D 93 ASTM D 93
Evaporation rate		No information available	
Flammability Limits in Air			
upper		No information available	
Lower		No information available	
Vapor Pressure		No information available	
Vapor density		No information available	
Relative density	0.842 - 0.852	@ 15 °C	ISO 12185
Density	842 - 852 kg/m ³	@ 15 °C	ISO 12185
Water solubility		Insoluble	
Solubility in other solvents		No information available	
logPow		No information available	

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Autoignition temperature	No information available		
Decomposition temperature	No information available		
Viscosity, kinematic	17 - 19 mm ² /s	@ 40 °C	ISO 3104
Explosive properties	Not explosive		
Oxidizing Properties	Not applicable		
Possibility of hazardous reactions	None under normal processing		

9.2. Other information

Freezing Point No information available

10. STABILITY AND REACTIVITY

<u>Reactivity</u>	None under normal processing.
<u>Chemical stability</u>	Stable under recommended storage conditions.
<u>Possibility of hazardous reactions</u>	No dangerous reaction known under conditions of normal use.
<u>Conditions to avoid</u>	Keep away from open flames, hot surfaces and sources of ignition. Keep away from heat and sparks.
<u>Incompatible materials</u>	Strong oxidizing agents.
<u>Hazardous Decomposition Products</u>	Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot. Combustion products include sulphur oxides (SO ₂ and SO ₃) and Hydrogen sulphide H ₂ S. Mercaptans. Nitrogen oxides (NO _x). Phosphorous oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Not classified based on available data. Inhalation of vapors in high concentration may cause irritation of respiratory system.
Ingestion	May be fatal if swallowed and enters airways. If swallowed accidentally, the product may enter the lungs due to its low viscosity and lead to the rapid development of very serious pulmonary lesions (medical survey during 48 hours). Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Skin contact	Not classified based on available data. High pressure injection of the products under the skin may have very serious consequences even though no symptom or injury may be apparent.
Eye contact	Not classified based on available data.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

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Delayed and immediate effects as well as chronic effects from short and long-term exposure**Acute toxicity - Product Information****Oral** Not classified based on available data.**ATEmix (oral)** > 5,000.00 mg/kg

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

Dermal Not classified based on available data.**ATEmix (dermal)** > 5,000.00 mg/kg

0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

Inhalation Not classified based on available data**ATEmix (inhalation-gas)** > 20,000.00 ppm

90.34126 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

ATEmix (inhalation-vapor) > 20.00 mg/l

90.34126 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

ATEmix (inhalation-dust/mist) 10.20 mg/l

0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Acute toxicity - Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Distillates (petroleum), hydrotreated light paraffinic 64742-55-8	LD50 > 5000 mg/kg bw (rat - OECD 420)	LD50 > 5000 mg/kg bw (rabbit - OECD 402)	LC50 (4h) > 5 mg/l (aerosol) (rat - OECD 403)
Hydrocarbons, C13-C16, n-alkanes, isoalkanes, cyclics, < 0.03% aromatics ^	LD50 > 5000 mg/kg bw (rat - OECD 401)	LD50 (24h) > 3160mg/kg bw (rabbit - OECD 402)	LC50 (4h) > 5266 mg/m ³ (aerosol) (rat - OECD 403)
Gas oils (petroleum), hydrodesulfurized 64742-79-6	LD50 > 5000 mg/kg bw (rat - OECD 401)	LD50 > 2000 mg/kg bw (rabbit - OECD 402)	LC50 (4h) 4.6 mg/l (aerosol) (rat - OECD 403)
tris(methylphenyl) phosphate 1330-78-5	DL50 3700 mg/kg (Rat)	LD50 10000 mg/kg (Rabbit)	LD50 11.1 mg/l

Skin corrosion/irritation Not classified based on available data.**Serious eye damage/eye irritation** Not classified based on available data.**Sensitization** Not classified based on available data.**Carcinogenicity** Not classified based on available data.**Germ Cell Mutagenicity** Not classified based on available data**Reproductive toxicity** Not classified based on available data.**Target Organ Effects (STOT)** None known**STOT - single exposure** Not classified based on available data

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STOT - repeated exposure	Not classified based on available data
Aspiration hazard	May be fatal if swallowed and enters airways. The fluid can enter the lungs and cause damage (chemical pneumonitis, potentially fatal).
Other adverse effects	Characteristic skin lesions (pimples) may develop following prolonged and repeated exposures (contact with contaminated clothing).

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Not classified based on available data.

Acute aquatic toxicity - Product Information

No information available.

Acute aquatic toxicity - Component Information

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Toxicity to microorganisms
Distillates (petroleum), hydrotreated light paraffinic 64742-55-8	EL50 (48h) > 100 mg (Pseudokirchnerella subcapitata - OECD 201)	EL50 (48h) > 10000 mg/l (Daphnia magna - OECD 202)	LL50 (96h) > 100 mg/l (Oncorhynchus mykiss - OECD 203)	
Hydrocarbons, C13-C16, n-alkanes, isoalkanes, cyclics, < 0.03% aromatics ^	ErL50 (72h) > 10000 mg/l (Skeletonema costatum - ISO 10253)	LL50 (48h) > 3193 mg/l (Acartia tonsa - ISO 14669)	LL50 (96h) > 1028 mg/l (Scophthalmus maximus - OECD 203)	
Gas oils (petroleum), hydrodesulfurized 64742-79-6		EL50 (48h) 7.385 mg/l (Daphnia magna - QSAR Petrotox)	LL50 (96h) 21 mg/l (Oncorhynchus mykiss - OECD 203)	
tris(methylphenyl) phosphate 1330-78-5	EC50 (72h) 0.4 mg/l Desmodesmus subspicatus	LC50 (48h) 0.14 mg/l Daphnia magna	LC50 (96h) 0.6 mg/l	

Chronic aquatic toxicity - Product Information

No information available.

Chronic aquatic toxicity - Component Information

Chemical Name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Toxicity to microorganisms
Distillates (petroleum), hydrotreated light paraffinic 64742-55-8		NOEL (21d) 10 mg/l (Daphnia magna - OECD 211)	NOEL (14/21d) > 1000 mg/l (Oncorhynchus mykiss - QSAR Petrotox)	
Hydrocarbons, C13-C16, n-alkanes, isoalkanes, cyclics, < 0.03% aromatics ^		NOELR (21d) > 1000 mg/l (Daphnia magna - QSAR Petrotox)	NOELR (28d) > 1000 mg/l (Oncorhynchus mykiss - QSAR Petrotox)	
Gas oils (petroleum),		NOEL (21d) 0.163 mg/l		

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hydrodesulfurized 64742-79-6		(Daphnia magna - QSAR Petrotox)		
tris(methylphenyl) phosphate 1330-78-5			NOEC (28d) 0.01 mg/l Oncorhynchus mykiss	

Effects on terrestrial organisms No information available.**Persistence and degradability**

No information available.

Bioaccumulative potential**Product Information** No information available.**logPow** No information available**Component Information**

Chemical Name	log Pow
tris(methylphenyl) phosphate - 1330-78-5	5.93

Mobility**Soil** Given its physical and chemical characteristics, the product generally shows low soil mobility.**Air** Loss by evaporation is limited.**Water** The product is insoluble and floats on water.**Other adverse effects****General Information** No information available.**13. DISPOSAL CONSIDERATIONS****Waste from Residues / Unused Products** Should not be released into the environment. Do not empty into drains. Dispose of in accordance with all applicable national environmental laws and regulations. Where possible recycling is preferred to disposal or incineration.**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal.**Other information** Refer to section 8 for safety and protective measures for disposal personnel.**14. TRANSPORT INFORMATION****ADG (Australia)** Not regulated

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ADR/RID Not regulatedIMDG/IMO Not regulatedICAO/IATA Not regulatedADN

UN/ID No	ID9006
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Hazard class	9
Hazard Labels	none
Description	ID9006, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., 9 (Gas oils (petroleum), hydrodesulfurized)
Equipment Requirements	PP

15. REGULATORY INFORMATION**National regulatory information**

Classified as hazardous according to Australia Model Work Health and Safety Regulations

16. OTHER INFORMATION

Issuing date:	2016-12-30
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Revision Note	No information available.

Abbreviations, acronyms

ACGIH = American Conference of Governmental Industrial Hygienists

bw = body weight

bw/day = body weight/day

EC x = Effect Concentration associated with x% response

GLP = Good Laboratory Practice

IARC = International Agency for Research of Cancer

LC50 = 50% Lethal concentration - Concentration of a chemical in air or a chemical in water which causes the death of 50% (one half) of a group of test animals

LD50 = 50% Lethal Dose - Chemical amount, given at once, which causes the death of 50% (one half) of a group of test animals

LL = Lethal Loading

NIOSH = National Institute of Occupational Safety and Health

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NOAEL = No Observed Adverse Effect Level

NOEC = No Observed Effect Concentration

NOEL = No Observed Effect Level

OECD = Organization for Economic Co-operation and Development

OSHA = Occupational Safety and Health Administration

UVCB = Substance of unknown or Variable composition, Complex reaction products or Biological material

ADG = Australian Dangerous Goods

Legend:

Section 8

ACGIH - American Conference of Governmental Industrial Hygienists

TWA - Time Weight Average

STEL - Short Term Exposure Limits

S* - Skin notation

Ceiling: Maximum limit value

STEL: Short term exposure limit

+ Sensitizer

C Carcinogen

TWA: Time weighted average

* Skin designation

** Hazard Designation

This safety data sheet serves to complete but not to replace the technical product sheets. The information contained herein is given in good faith and is accurate to the best of knowledge at the date indicated above. It is understood by the user that any use of the product for purposes other than those for which it was designed entails potential risk. The information given herein in no way dispenses the user from knowing and applying all provisions regulating his activity. The user bears sole liability for the precautions required when using the product. The regulatory texts indicated herein are intended to aid the user to fulfil his obligations. This list is not to be considered complete and exhaustive. It is the user's responsibility to ensure that he is subject to no other obligations than those mentioned.

End of the Safety Data Sheet