



SAFETY DATA SHEET

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

SDS # : A02142

ELF LMS

Issuing date: 2018-05-16

Revision Date: 2020-01-28

Version 3

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

Product identifier

Product name ELF LMS

Other means of identification

Substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Identified uses Fuel.

Details of the supplier of the safety data sheet

Supplier TOTAL ADDITIFS ET CARBURANTS SPECIAUX
Place du Bassin
69700 Givors
FRANCE
Tel: +33 (0) 4 72 49 27 00
Fax: +33 (0) 4 78 07 92 49

TOTAL OIL ASIA PACIFIC PTE LTD
182 Cecil Street
#27-01 Frasers Tower
Singapore 069547
Tel: +65 6879 2200
Fax: +65 6879 2203

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

Flammable liquids - Category 2



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Aspiration toxicity - Category 1
 Skin corrosion/irritation - Category 2
 Serious eye damage/eye irritation - Category 2
 Germ Cell Mutagenicity - Category 1B
 Carcinogenicity - Category 1B
 Reproductive toxicity - Category 2
 Specific target organ toxicity (single exposure) - Category 3
 Specific target organ toxicity (repeated exposure) - Category 2

GHS Label elements, including precautionary statements

Signal word

DANGER**Hazard Statements**

H225 - Highly flammable liquid and vapor
 H304 - May be fatal if swallowed and enters airways
 H315 - Causes skin irritation
 H319 - Causes serious eye irritation
 H336 - May cause drowsiness or dizziness
 H340 - May cause genetic defects
 H350 - May cause cancer
 H361 - Suspected of damaging fertility or the unborn child
 H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary Statements - Prevention

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Wear protective gloves/protective clothing/eye protection/face protection
- Wash face, hands and any exposed skin thoroughly after handling
- Use only outdoors or in a well-ventilated area
- Do not breathe dust/fume/gas/mist/vapors/spray
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- Keep container tightly closed
- Ground/bond container and receiving equipment
- Use explosion-proof electrical/ ventilating / lighting equipment
- Use only non-sparking tools
- Take precautionary measures against static discharge

Precautionary Statements - Response

- IF exposed or concerned: Get medical advice/attention
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- If eye irritation persists: Get medical advice/attention
- If skin irritation occurs: Get medical advice/attention
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- Take off contaminated clothing and wash before reuse



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- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- Do NOT induce vomiting
- In case of fire: Use CO₂, dry chemical, or foam for extinction

Precautionary Statements - Storage

- Store locked up
- Store in a well-ventilated place. Keep container tightly closed
- Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal

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

Other hazards which do not result in classification

Environmental properties Should not be released into the environment

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	EC-No	Weight %
toluene	108-88-3	203-625-9	25 - 50
Naphtha (petroleum), full-range alkylate, butane-contg.	68527-27-5	271-267-0	10 - 25
tert-butyl methyl ether	1634-04-4	216-653-1	10 - 25
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics	^	920-750-0	5 - 10
isopentane	78-78-4	201-142-8	5 - 10
Reaction mass of ethylbenzene and xylene	^	905-588-0	2.5 - 5
Hydrocarbons, C5-rich	68476-55-1	270-695-5	5 - 10

Other constituents required for disclosure

Chemical Name	CAS-No	EC-No	Weight %
xylene	1330-20-7	215-535-7	2.5 - 5
Pentane	109-66-0	203-692-4	1 - 2.5
Ethylbenzene	100-41-4	202-849-4	0.1 - 1
heptane	142-82-5	205-563-8	0.1 - 1
Cyclohexane	110-82-7	203-806-2	0.1 - 1
n-Hexane	110-54-3	203-777-6	0.1 - 1

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. Show this safety data sheet to the doctor in attendance.

Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Keep eye wide open while rinsing.



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Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Inhalation of high concentrations of vapor or aerosols may cause irritation of the upper respiratory tract. If not breathing, give artificial respiration. Call a physician immediately.
Ingestion	Call a POISON CENTER or doctor/physician if exposed or you feel unwell. Clean mouth with water. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice. Smallest quantities reaching the lungs through swallowing or subsequent vomiting may result in lung edema or pneumonia.
Protection of First-aiders	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	Reddening, irritation.
Eye contact	Burning feeling and temporary redness.
Inhalation	Vapors may cause drowsiness and dizziness.
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.
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5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO₂). ABC powder. Foam. Cool containers / tanks with water spray. Water spray, fog or regular foam.

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 Vapors may form explosive mixtures with air. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Flash back possible over considerable distance. 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.



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Advice for fire-fighters

Special protective equipment for fire-fighters

Wear self-contained breathing apparatus and protective suit. In case of a large fire or in confined or poorly ventilated spaces, wear full fire resistant protective clothing and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Other information

Cool down any tanks and surfaces exposed to fire by spraying abundantly with water. Use water to cool tanks and parts exposed to the thermal flux not caught up in the flames. Do not allow run-off from fire fighting to enter drains or water courses. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Hazchem Code

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

General Information

Except in case of small spillages. The feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency.

If required, notify relevant authorities according to all applicable regulations.

Evacuate non-essential personnel. For personal protection see section 8.

Stop or contain leak at the source, if safe to do so. Cut off the electric power supply if this operation causes no sparks in the area containing vapors from the product. Stay upwind. In case of large spillages, alert occupants in downwind areas. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). In case of important spillages: risk of fire or explosion. Cover discharges with foam in order to reduce the risks of ignition. Vapours are heavier than air and may spread near ground level to sources of ignition.

Advice for non-emergency personnel

Do not touch or walk through spilled material. For personal protection see section 8. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Advice for emergency responders

Take all appropriate steps to avoid fire, explosion and inhalation hazards to the rescuers including the use of breathing apparatus. In case of.

Small spillages: normal antistatic working clothes are usually adequate.

Large spillages: full body suit of chemically resistant and antistatic material. Work gloves (preferably gauntlets) providing adequate chemical resistance. Remarks: Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Work helmet.

Antistatic non-skid safety shoes or boots. Goggles and/or face shield, if splashes or contact with eyes is possible or anticipated.

Respiratory protection. A half or full-face respirator with filter(s) for organic vapours (and when applicable: for H₂S). A Self-Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

Environmental precautions

General Information

Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained. The product should not be allowed to



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enter drains, water courses or the soil.
Prevention of fire and explosion. A vapor suppressing foam may be used to reduce vapors. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. In case of spill in river, suspend the use of the water downstream to the spillpoint. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for cleaning up

Dam up. Ground and bond containers when transferring material. Keep in suitable, closed containers for disposal.
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Use clean non-sparking tools to collect absorbed material.

Other information

Personal Protective Equipment

See Section 8 for more detail.

Waste treatment

See section 13.

Other information

Recommended measures are based on the most likely spillage scenarios for this material. However, local conditions (wind, air temperature, wave/current direction and speed) may significantly influence the choice of appropriate actions.
For this reason, local experts should be consulted when necessary.
Local regulations may also prescribe or limit actions to be taken.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

NEVER ATTEMPT TO PRIME THE CONTAINER SIPHON BY SUCKING WITH THE MOUTH.
Avoid contact with skin, eyes and clothing. Prevent the formation of vapors, mists and aerosols. Take precautionary measures against static electricity. Ensure that all relevant regulations regarding explosive atmospheres, handling and storage facilities of flammable products, are followed. The inspection, cleaning and maintenance of storage containers require the application of strict procedures and must be entrusted to qualified personnel (internal or external).
Ensure adequate ventilation. Vapors may form explosive mixtures with air. Do not smoke. Avoid breathing vapors or mists.
Do not use compressed air for filling, discharging, or handling operations. Never pierce, drill, grind, cut, saw or weld any empty container.
For personal protection see section 8.

Technical measures

Ensure adequate ventilation
WHILE MOVING THE PRODUCT: To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded
Take all necessary precautions to prevent water from entering the containers, tanks, transfer lines etc..



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Prevention of fire and explosion	Keep away from open flames, hot surfaces and sources of ignition. Design installations (machinery and equipment) to prevent burning product from spreading (tanks, retention systems, interceptors (traps) in drainage systems). OPERATE ONLY ON COLD AND DEGASSED TANKS IN VENTILATED PREMISES (TO AVOID RISK OF EXPLOSION). Do not use compressed air for filling, discharging or handling. Empty containers may contain flammable or explosive vapors. Do not allow splash loading and ensure that the product is poured slowly, particularly at the beginning of the operation.
Hygiene measures	When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Keep away from food, drink and animal feeding stuffs. Regular cleaning of equipment, work area and clothing is recommended. Ensure the application of strict rules of hygiene by the personnel exposed to the risk of contact with the product. Use personal protective equipment as required. Avoid breathing vapors, mist or gas. IF ON SKIN: Wash skin with soap and water. Remove contaminated clothing and shoes. Gloves must be periodically inspected and changed in case of wear, perforations or contaminations.
<u>Conditions for safe storage, including any incompatibilities</u>	
Technical measures/Storage conditions	Storage area layout, tank design, equipment and operating procedures must comply with the relevant European, national or local legislation. . All the electric installations, including the lighting of rooms that may contain this product, must be adapted to the risk area, in compliance with the European ATEX directives. Take precautionary measures against static discharges. . Ensure all equipment is electrically grounded before beginning transfer operations. Storage installations should be designed with adequate bunds so as to prevent ground or water pollution in case of leaks or spills. Do not remove the hazard labels of the containers (even if they are empty). . Store the packed products (drums, samples, cans ...) in properly ventilated rooms, away from damp, heat and any potential source of ignition. . Keep preferably in the original container. Otherwise reproduce all indication of the regulation label on the new container. Keep containers tightly closed and properly labelled. Store separately from oxidising agents.
Materials to Avoid	Strong oxidizing agents. Strong bases.
Packaging material	Use only containers, seals, pipes, etc... made in a material suitable for use with aromatic hydrocarbons,

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits

Ingredients with workplace control parameters

Chemical Name	ACGIH (Additional information)	Australia	The United Kingdom	Germany
toluene 108-88-3	TWA 20 ppm	STEL 150 ppm STEL 574 mg/m ³	STEL 100 ppm STEL 384 mg/m ³	AGW 50 ppm AGW 190 mg/m ³

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		TWA 50 ppm TWA 191 mg/m ³	TWA 50 ppm TWA 191 mg/m ³ S*	H*
tert-butyl methyl ether 1634-04-4	TWA 50 ppm	STEL 75 ppm STEL 275 mg/m ³ TWA 25 ppm TWA 92 mg/m ³	STEL 100 ppm STEL 367 mg/m ³ TWA 50 ppm TWA 183.5 mg/m ³	AGW 50 ppm AGW 180 mg/m ³
isopentane 78-78-4	TWA 1000 ppm		STEL 1800 ppm STEL 5400 mg/m ³ TWA 600 ppm TWA 1800 mg/m ³	AGW 1000 ppm AGW 3000 mg/m ³

Other constituents required for disclosure

Chemical Name	ACGIH (Additional information)	Australia	The United Kingdom	Germany
xylene 1330-20-7	TWA 100 ppm STEL 150 ppm	STEL 150 ppm STEL 655 mg/m ³ TWA 80 ppm TWA 350 mg/m ³	STEL 100 ppm STEL 441 mg/m ³ TWA 50 ppm TWA 220 mg/m ³ S*	AGW 100 ppm AGW 440 mg/m ³ H*
Pentane 109-66-0	TWA 1000 ppm	STEL 750 ppm STEL 2210 mg/m ³ TWA 600 ppm TWA 1770 mg/m ³	STEL 1800 ppm STEL 5400 mg/m ³ TWA 600 ppm TWA 1800 mg/m ³	AGW 1000 ppm AGW 3000 mg/m ³
Ethylbenzene 100-41-4	TWA 20 ppm	STEL 125 ppm STEL 543 mg/m ³ TWA 100 ppm TWA 434 mg/m ³	STEL 125 ppm STEL 552 mg/m ³ TWA 100 ppm TWA 441 mg/m ³ S*	AGW 20 ppm AGW 88 mg/m ³ H*
heptane 142-82-5	TWA 400 ppm STEL 500 ppm	STEL 500 ppm STEL 2050 mg/m ³ TWA 400 ppm TWA 1640 mg/m ³	STEL 1500 ppm STEL 6255 mg/m ³ TWA 500 ppm TWA 2085 mg/m ³	AGW 500 ppm AGW 2100 mg/m ³
Cyclohexane 110-82-7	TWA 100 ppm	STEL 300 ppm STEL 1050 mg/m ³ TWA 100 ppm TWA 350 mg/m ³	STEL 300 ppm STEL 1050 mg/m ³ TWA 100 ppm TWA 350 mg/m ³	AGW 200 ppm AGW 700 mg/m ³
n-Hexane 110-54-3	S* TWA 50 ppm	TWA 20 ppm TWA 72 mg/m ³	STEL 60 ppm STEL 216 mg/m ³ TWA 20 ppm TWA 72 mg/m ³	AGW 50 ppm AGW 180 mg/m ³

Biological occupational exposure limits

Chemical Name	ACGIH (Additional information)	Australia	The United Kingdom	Germany
toluene 108-88-3	Toluene in blood 0.02 mg/L -prior to last shift of workweek Toluene in urine 0.03 mg/L -end of shift o-Cresol with hydrolysis in urine 0.3 mg/g creatinine -end of shift			Biological limit values according to (German) Ordinance on Occupational Health Care from 18 December 2008 have to be considered Biological limit values according to TRGS 903 have to be considered

Other constituents required for disclosure



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Chemical Name	ACGIH (Additional information)	Australia	The United Kingdom	Germany
xylene 1330-20-7	Methylhippuric acids in urine 1.5 g/g creatinine -end of shift		650 mmol/mol creatinine in urine	Biological limit values according to (German) Ordinance on Occupational Health Care from 18 December 2008 have to be considered Biological limit values according to TRGS 903 have to be considered
Ethylbenzene 100-41-4	Sum of mandelic acid and phenylglyoxylic acid in urine 0.15 g/g creatinine -end of shift			Biological limit values according to TRGS 903 have to be considered
Cyclohexane 110-82-7				Biological limit values according to TRGS 903 have to be considered
n-Hexane 110-54-3	2,5-Hexanedione without hydrolysis in urine 0.4 mg/L -end of shift at end of workweek			Biological limit values according to TRGS 903 have to be considered

Appropriate engineering controls**Engineering Measures**

Ensure adequate ventilation. Apply technical measures to comply with the occupational exposure limits.

When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment. Do not enter empty storage tanks until measurements of available oxygen have been carried out.

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.

Respiratory protection

When using a mask or half mask :. Type AX. 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.

Skin and body protection

Impermeable gloves. Antistatic boots. Wear fire/flamm resistant/retardant clothing. Long sleeved clothing. Chemical resistant apron. Apron. Wear suitable protective clothing. Protective shoes or boots.

Hand Protection

Hydrocarbon-proof gloves for aromatic hydrocarbons. 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.

Repeated or prolonged exposure			
Glove material	Glove thickness	Break through time	Remarks
PVA	(*)	> 480 min	EN 374 (*) any thickness

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Fluorinated rubber	(*)	> 480 min	EN 374 (*) any thickness
Nitrile rubber	> 0.5 mm	> 480 min	EN 374

In case of contact through splashing:			
Glove material	Glove thickness	Break through time	Remarks
Nitrile rubber	> 0.3 mm	> 60 min	EN 374

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Color colorless
Physical State @20°C liquid
Odor Petroleum distillates
Odor Threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks</u>	<u>Method</u>
pH		Not applicable	
Melting point/range		Not applicable	
Boiling point/boiling range	35.5 - 155 °C 96 - 311 °F		ISO 3405 ISO 3405
Flash point	<= -30 °C <= -22 °F		ASTM D 93 ASTM D 93
Evaporation rate	> 1	EtEt=1	
Flammability Limits in Air		No information available	
Vapor Pressure	530 hPa	@ 37.8 °C	ISO 13016-1
Vapor density	> 1	(Air = 1)	
Relative density	0.75		
Density	753 kg/m ³	@ 15 °C	ISO 12185
Water solubility		slightly soluble	
Solubility in other solvents		Soluble in hydrocarbons	
logPow		Not applicable	
Autoignition temperature	> 230 °C > 446 °F		
Decomposition temperature		Not applicable	
Viscosity, kinematic	< 1 mm ² /s	@ 40 °C	ISO 3104
Explosive properties	Not considered explosive based on chemical structure and oxygen balance considerations		
Oxidizing Properties	This product is not considered oxidising based on chemical structure considerations		
Possibility of hazardous reactions	None under normal processing		

9.2. Other information

Freezing Point No information available
Conductivity > 1 pS/m ASTM D2624

10. STABILITY AND REACTIVITY

Reactivity No information available.



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<u>Chemical stability</u>	Stable under recommended storage conditions.
<u>Possibility of hazardous reactions</u>	None under normal processing.
<u>Conditions to avoid</u>	Heat, flames and sparks. Take precautionary measures against static discharges. Heating in air.
<u>Incompatible materials</u>	Strong oxidizing agents. Strong bases.
<u>Hazardous Decomposition Products</u>	None under normal use. Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot. Carbon oxides.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Inhalation	Vapors may cause drowsiness and dizziness.
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	Reddening, irritation.
Eye contact	Burning feeling and temporary redness.

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.
Dermal	Not classified based on available data.
Inhalation	Not classified based on available data

Acute toxicity - Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
toluene 108-88-3	5580 mg/kg bw (rat)	> 5000 mg/kg bw (rabbit)	28.1 mg/L (Rat-vapour) 4h
Naphtha (petroleum), full-range alkylate, butane-contg. 68527-27-5	LD50 > 5000 mg/kg bw (rat - OECD TG 401)	LD50 > 2000 mg/kg bw (rabbit - OECD TG 402 - under occlusive conditions)	LC50 (4h) > 5610 mg/m ³ air (vapor) (rat - OECD 403)
tert-butyl methyl ether	= 4 g/kg (Rat)	> 2000 mg/kg (Rat) > 10000	= 23576 ppm (Rat) 4 h = 85 mg/L



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1634-04-4		mg/kg (Rabbit)	(Rat) 4 h
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics ^	LD50 > 5840 mg/kg bw (rat)	LD50 (24h) > 2920 mg/kg bw (rat)	LC50 (4h) > 23300 mg/m ³ (vapour) (rat - OECD 403)
isopentane 78-78-4	LD50 > 2000 mg/kg (Rat -OECD 401)		LC50 (4h) > 25.3 mg/l (Rat - vapor - OECD 403)
Reaction mass of ethylbenzene and xylene ^	LD50 3523 mg/kg bw (rat)	LD50 12126 mg/kg bw (rabbit)	LC50(4h) 6350-6700 ppm (rat - gas)
Hydrocarbons, C5-rich 68476-55-1	LD50 >2000 mg/kg bw (rat Wistar male/female) (OECD Guideline 401)		

Skin corrosion/irritation	Irritating to skin.
Serious eye damage/eye irritation	Causes serious eye irritation.
Sensitization	Not classified based on available data.
Carcinogenicity	May cause cancer.

Chemical Name	Australia	ACGIH	IARC
tert-butyl methyl ether 1634-04-4		A3	

Other constituents required for disclosure

Chemical Name	Australia	ACGIH	IARC
Ethylbenzene 100-41-4		A3	2B

Legend See section 16 for terms and abbreviations**ACGIH: (American Conference of Governmental Industrial Hygienists)** A1 - Known Human Carcinogen

A3 - Animal Carcinogen

IARC: (International Agency for Research on Cancer) Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

Germ Cell Mutagenicity	May cause genetic defects
Reproductive toxicity	Suspected of damaging fertility or the unborn child.
Subchronic toxicity	No information available.
Target Organ Effects (STOT)	None known
STOT - single exposure	Vapors may cause drowsiness and dizziness
STOT - repeated exposure	May cause damage to organs through prolonged or repeated exposure
Aspiration hazard	May be fatal if swallowed and enters airways.
Neurological effects	No information available.
Other adverse effects	No information available.



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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
toluene 108-88-3	EC50 (3 h) 134 mg/l Chlorella vulgaris	EC50 (48h) 3.78mg/l Daphnia magna	LC50 (96h) 5.5 mg/l Oncorhynchus kisutch	-
Naphtha (petroleum), full-range alkylate, butane-contg. 68527-27-5	EL50(72h) 3.1 mg/l (Selenastrum capricornutum/Pseudokirchnerella subcapitata - OECD 201)	EL50(48h) 4.5 mg/l (Daphnia magna - OECD 202)	LL50(96h) 8.2 mg/l (Pimephales promelas)	
tert-butyl methyl ether 1634-04-4	EC50 (72h) > 800 mg/L Desmodesmus subspicatus EC50 (96h) = 184 mg/L Pseudokirchneriella subcapitata	EC50 (48h) = 542 mg/L Daphnia magna	LC50 (96h) = 672 mg/L Pimephales promelas (flow-through) LC50 (96h) > 100 mg/L Brachydanio rerio (semi-static) LC50 (96h) = 929 mg/L Pimephales promelas (static) LC50 (96h) = 887 mg/L Oncorhynchus mykiss (flow-through)	
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics ^	EbL50 (72h) = 10-30 mg/l (Pseudokirchneriella subcapitata - OECD 201) ErL50 (72h) = 10-30 mg/l (Pseudokirchneriella subcapitata - OECD 201)	EL50 (48h) = 4,6-10,0 mg/l (Daphnia magna - OECD 202)	LL50 (96h) = 3-10 mg/l (Oncorhynchus mykiss - OECD 203)	-
isopentane 78-78-4	EC50 (72h) 10.7 mg/l (Pseudokirchneriella subcapitata - Read across)	EC50 (48h) = 2.3 mg/l (Daphnia magna - Read across)	LC50 (96h) 4.26 mg/l (Oncorhynchus mykiss - Read across)	
Reaction mass of ethylbenzene and xylene ^	EC50(73h) 2.2 mg/l (Selenastrum capricornutum)	LC50(24h) 1 mg/l (Daphnia magna-OECD Guideline 202)	LC50(96h) 2.6 mg/l (Oncorhynchus mykiss-OECD Guideline 203)	
Hydrocarbons, C5-rich 68476-55-1	EC50(72h) 12.4 mg/l (Pseudokirchnerella subcapitata)	EC50(48h) 4.7 mg/l (Daphnia magna)	LC50(96h) 8.41 mg/l (Oncorhynchus mykiss)	

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
toluene	NOEC(72h) 10 mg/l	NOEC (7d) 0.74 mg/l	NOEC (40d) 1.39 mg/l	



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108-88-3	Skeletonema costatum	(Ceriodaphnia dubia) EC50 (7d) 3.23 mg/l (Ceriodaphnia dubia) LOEC (7d) 2.76 mg/l (Ceriodaphnia dubia)	(Oncorhynchus kisutch) LOEC (40d) 2.77 mg/l (Oncorhynchus kisutch)	
Naphtha (petroleum), full-range alkylate, butane-contg. 68527-27-5	NOELR(96h) 51 mg/l (based on cell density - Pseudokirchnerella subcapitata)			
Hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics ^	NOELR (72h) = 6,3 mg/l (Pseudokirchneriella subcapitata - biomass - OECD 201) NOELR (72h) = 6,3 mg/l (Pseudokirchneriella subcapitata - growth rate - OECD 201)	NOELR (21d) = 1 mg/l (Daphnia magna - OECD 211)	NOELR (28d) = 0,57 mg/l (Oncorhynchus mykiss - QSAR Petrotox)	

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

No information available.

Bioaccumulative potential**Product Information** No information available.**logPow** Not applicable**Component Information**

Chemical Name	log Pow
toluene - 108-88-3	2.73
tert-butyl methyl ether - 1634-04-4	1.06
isopentane - 78-78-4	3.3
Reaction mass of ethylbenzene and xylene - ^	3.12 - 3.49 @ 20 - 30 °C and pH 5 - 8
Hydrocarbons, C5-rich - 68476-55-1	2.2-5 à 23°C

Mobility**Soil** Given its physical and chemical characteristics, the product is generally mobile in the ground. It may contaminate ground water.**Air** The product evaporates in the air and dissipates more or less depending on local conditions. However, it may stagnate in pools in low-lying areas, in an undisturbed or confined atmosphere.**Water** The product spreads on the surface of the water. A small amount may solubilise in water.**Other adverse effects****General Information** No information available.



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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.
Contaminated packaging	Empty containers may contain flammable or explosive vapors. Do not burn, or use a cutting torch on, the empty drum. 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 INFORMATIONADG (Australia)

UN Number	UN1203
Proper shipping name	GASOLINE
Hazard class	3
Packing Group	II
Special Provisions	243
Description	UN1203, GASOLINE, 3, II
Hazchem Code	3YE

ADR/RID

UN/ID No	UN1203
Proper shipping name	GASOLINE
Proper shipping name	GASOLINE
Hazard class	3
Packing Group	II
ADR/RID-Labels	3
Environmental hazard	Yes
Classification Code	F1
Special Provisions	243, 534, 664
Tunnel Restriction Code	(D/E)
ADR Hazard Id (Kemmler Number)	33
Description	UN1203, GASOLINE, 3, II, (D/E), Environmentally hazardous
Excepted Quantity	E2
Limited quantity	1 L

IMDG/IMO

UN/ID No	UN1203
Proper shipping name	GASOLINE
Hazard class	3
Packing Group	II
Marine pollutant	Yes
EmS No.	F-E, S-E
Description	UN1203, GASOLINE, 3, II, (-30°C C.C.), MARINE POLLUTANT
Special Provisions	243
Excepted Quantity	E2



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Limited quantity	1 L
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ICAO/IATA

UN/ID No	UN1203
Proper shipping name	Gasoline
Hazard class	3
Packing Group	II
ERG Code	3H
Special Provisions	A100
Description	UN1203, Gasoline, 3, II
Excepted Quantity	E2
Limited quantity	1 L

ADN

UN/ID No	UN1203
Proper shipping name	GASOLINE
Proper shipping name	GASOLINE
Hazard class	3
Hazard Labels	3
Packing Group	II
Environmental hazard	Yes
Classification Code	F1
Special Provisions	243, 534
Description	UN1203, GASOLINE, 3, II, Environmentally hazardous
Excepted Quantity	E2
Limited quantity	1 L
Ventilation	VE01
Equipment Requirements	PP, EX, A

15. REGULATORY INFORMATIONInternational Inventories

All the substances contained in this product are listed or exempted from listing in the following inventories:
 Europe (EINECS/ELINCS/NLP)
 U.S.A. (TSCA)
 Japan (ENCS)
 Australia (AICS)

National regulatory information

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

Chemical Name	Standard for the Uniform Scheduling of Drugs and Poisons
toluene - 108-88-3	Schedule 6

Major hazard (accident/incident planning) regulation Verify that license requirements are met

Hazardous chemical	Threshold quantity (T)
Liquids that meet the criteria for Class 3 Packing Group II or III	50000



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Liquids with flash points <61°C kept above their boiling points at ambient conditions	200
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National pollutant inventory

Subject to reporting requirement

Chemical Name
toluene - 108-88-3

Australia - National Pollutant Inventory (NPI) Substance List
--

10 tonne/yr Threshold category 1

16. OTHER INFORMATION

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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

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

TWA:

Time weighted average

STEL: Short term exposure limit

*

Skin designation

+ Sensitizer

**

Hazard Designation

C Carcinogen

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



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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