



Section 1 - Identification of The Material and Supplier

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Chemical nature: Blend of ingredients in a liquid hydrocarbon solution.

Trade Name: Lucas Octane Booster

Product Use: Petrol additive.

Creation Date: July, 2016

This version issued: July, 2016 and is valid for 5 years from this date.

Poisons Information Centre: Phone 13 1126 from anywhere in Australia

Section 2 - Hazards Identification

Statement of Hazardous Nature

This product is classified as: T, Toxic. Hazardous according to the criteria of SWA.

Dangerous according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

SUSMP Classification: None allocated.

ADG Classification: Class 6.1: Toxic Substances.

UN Number: 2810, TOXIC LIQUID, ORGANIC, N.O.S. (Methylcyclopentadienyl manganese tricarbonyl)



GHS Signal word: DANGER

Flammable liquids Category 4
Acute Toxicity Oral Category 3
Aspiration Hazard Category 2
Acute Toxicity Dermal Category 4
Acute Toxicity Inhalation Category 3
Specific Target Organ toxicity - repeated exposure Category 2

HAZARD STATEMENT:

H227: Combustible liquid.
H301: Toxic if swallowed.
H305: May be harmful if swallowed and enters airways.
H312: Harmful in contact with skin.
H331: Toxic if inhaled.
H373: May cause damage to organs through prolonged or repeated exposure.

PREVENTION

P102: Keep out of reach of children.
P210: Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
P260: Do not breathe fumes, mists, vapours or spray.
P261: Avoid breathing fumes, mists, vapours or spray.
P262: Do not get in eyes, on skin, or on clothing.
P264: Wash contacted areas thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well ventilated area.
P280: Wear protective gloves, protective clothing and eye or face protection.

RESPONSE

P311: Call a POISON CENTRE or doctor.
P361: Remove all contaminated clothing immediately.
P363: Wash contaminated clothing before reuse.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTRE or doctor.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P370+P378: In case of fire, use carbon dioxide, dry chemical, foam, water fog. Water fog or fine spray is the preferred medium for large fires.

STORAGE

P405: Store locked up.

P402+P404: Store in a dry place. Store in a closed container.

P403+P235: Store in a well-ventilated place. Keep cool.

DISPOSAL

P501: If they can not be recycled, dispose of contents to an approved waste disposal plant and containers to landfill (see Section 13 of this SDS).

Emergency Overview

Physical Description & Colour: Clear, light yellow liquid.

Odour: Characteristic Petroleum solvent odour.

Major Health Hazards: toxic by inhalation and if swallowed, harmful in contact with skin, if aspirated, may cause lung damage.

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, %	TWA (mg/m ³)	STEL (mg/m ³)
Solvent naphtha (petroleum), medium aliphatic	64742-88-7	30-60	not set	not set
Methylcyclopentadienyl manganese tricarbonyl	12108-13-3	1-5	0.2	not set
Other ingredients said to be not hazardous	secret	to 100	not set	not set

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this SDS with you when you call.

Inhalation: If inhalation occurs, contact a Poisons Information Centre. Urgent hospital treatment is likely to be needed. Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

Skin Contact: Wash gently and thoroughly with warm water (use non-abrasive soap if necessary) for 10-20 minutes or until product is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts) and completely decontaminate them before reuse or discard.

Eye Contact: No effects expected. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the product is removed. Obtain medical advice if irritation becomes painful or lasts more than a few minutes. Take special care if exposed person is wearing contact lenses.

Ingestion: If swallowed, do NOT induce vomiting; rinse mouth thoroughly with water and contact a Poisons Information Centre, or call a doctor at once. Give activated charcoal if instructed.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is little risk of an explosion from this product if commercial quantities are involved in a fire. Violent steam generation or eruption may occur upon application of direct water stream on hot liquids. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

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Extinguishing Media: In case of fire, use carbon dioxide, dry chemical, foam, water fog. Water fog or fine spray is the preferred medium for large fires. Try to contain spills, minimise spillage entering drains or water courses.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade. There is little danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is liquid-tight chemical protective clothing and breathing apparatus.

Flash point: 88°C, Closed cup

Upper Flammability Limit: No data.

Lower Flammability Limit: No data.

Autoignition temperature: No data.

Flammability Class: Flammable Category 4 (GHS), C1 combustible (AS 1940)

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Wear full protective chemically resistant clothing including eye/face protection, gauntlets and self contained breathing apparatus. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include no specific manufacturer recommendations. Use impermeable gloves with care. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned below (section 8). Otherwise, not normally necessary.

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Because of the toxicity of this product, special personal care should be taken in any cleanup operation. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

Section 7 - Handling and Storage

Handling: Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

Storage: Store in a cool, well ventilated area. Check containers periodically for leaks. Containers should be kept closed in order to minimise contamination. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. If you keep more than 10000kg or L of Dangerous Goods of Packaging Group III, you may be required to license the premises or notify your Dangerous Goods authority. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits

Methylcyclopentadienyl manganese tricarbonyl

TWA (mg/m³)

0.2

STEL (mg/m³)

not set

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.

Eye Protection: Eye protection such as protective glasses or goggles is recommended when this product is being used.

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Skin Protection: Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

Protective Material Types: There is no data that enables us to recommend any type except that it should be impermeable.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Otherwise, not normally necessary.

Safety deluge showers should, if practical, be provided near to where this product is being handled commercially.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Clear, light yellow liquid.
Odour:	Characteristic Petroleum solvent odour.
Boiling Point:	190-210°C at 100kPa
Freezing/Melting Point:	No specific data. Liquid at normal temperatures.
Volatiles:	No specific data. Expected to be low at 100°C.
Vapour Pressure:	No data.
Vapour Density:	No data.
Specific Gravity:	0.871
Water Solubility:	Negligible at 25°C.
pH:	No data.
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water Distribution:	No data
Viscosity:	4 cSt at 100°C
Autoignition temp:	No data.

Section 10 - Stability and Reactivity

Reactivity: This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

Conditions to Avoid: This product should be kept in a cool place, preferably below 30°C. Keep containers tightly closed. Containers should be kept dry. Keep containers and surrounding areas well ventilated. Keep isolated from combustible materials.

Incompatibilities: oxidising agents.

Fire Decomposition: Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. Water is also formed. Manganese compounds. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

Polymerisation: This product will not undergo polymerisation reactions.

Section 11 - Toxicological Information

Toxicity: A summary of white spirit type hydrocarbons can be found at

<http://www.inchem.org/documents/ehc/ehc/ehc187.htm>

Ingestion of white spirit has been reported to produce gastrointestinal irritation with pain, vomiting and diarrhoea.

Lesions of the mucous membranes in the oesophagus and the gastrointestinal tract followed the oral exposure.

Owing to its low viscosity and low surface tension, white spirit poses a risk of aspiration into the lungs following oral exposure. A few ml of solvent aspirated into the lungs are able to produce serious bronchopneumonia and 10-30ml may be fatal.

Prolonged dermal exposure to white spirit, e.g., resulting from wearing clothes that have been soaked or moistened by white spirit for hours, may produce irritation and dermatitis.

Single cases of acute toxicity to the kidney, liver and bone marrow have been reported following exposure to white spirit at high levels. However, owing to lack of details and the sporadic nature of the reportings, the relevance of these findings is unclear.

Inhalation of aliphatic hydrocarbon vapours seems to show little toxicity but are CNS depressants and have a disinhibiting euphoric effect.

Solvent naphtha (petroleum), medium aliphatic:

LD₅₀ (Oral), Rat >5000mg/kg

LD₅₀ (Dermal), Rabbit >3000mg/kg

LC₅₀ Inhal, 4hr Rat >5500ppm

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**Tricarbonyl(methylcyclopentadienyl) manganese**LD₅₀ (Oral), Rat 8mg/kgLD₅₀ (Dermal), Rabbit 140mg/kgLC₅₀ Inhal, 4hr Rat 0.247mg/L**Classification of Hazardous Ingredients**

Ingredient

Risk Phrases

Methylcyclopentadienyl Manganese Tricarbonyl

>=3%Conc<7%: T; R23/25; R21; R48/20

Potential Health Effects**Inhalation:****Short Term Exposure:** Available data shows that this product is toxic, but symptoms are not available. In addition product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.**Long Term Exposure:** No data for health effects associated with long term inhalation.**Skin Contact:****Short Term Exposure:** Available data shows that this product is harmful, but symptoms are not available. In addition product may be irritating, but is unlikely to cause anything more than mild transient discomfort.**Long Term Exposure:** No data for health effects associated with long term skin exposure.**Eye Contact:****Short Term Exposure:** This product may be irritating to eyes, but is unlikely to cause anything more than mild transient discomfort.**Long Term Exposure:** No data for health effects associated with long term eye exposure.**Ingestion:****Short Term Exposure:** Significant oral exposure is considered to be unlikely. Available data shows that this product is toxic, but further symptoms are not available. However, this product may be irritating to mucous membranes but is unlikely to cause anything more than transient discomfort.**Long Term Exposure:** No data for health effects associated with long term ingestion.**Carcinogen Status:****SWA:** No significant ingredient is classified as carcinogenic by SWA.**NTP:** No significant ingredient is classified as carcinogenic by NTP.**IARC:** No significant ingredient is classified as carcinogenic by IARC.**Section 12 - Ecological Information**

Insufficient data to be sure of status.

Biodegradation is expected to be the primary fate process for aliphatic hydrocarbons in soil and water. The rate and extent of biodegradation are dependent on the ambient temperature, the presence of a sufficient number of microorganisms capable of metabolizing the hydrocarbons and the concentration of white spirit in or on the soil or water.

Biodegradation of C₇ to C₁₂ hydrocarbons is expected to be significant under environmental conditions favourable to microbial oxidation. Naturally occurring hydrocarbon-degrading microorganisms have been isolated from polluted soil and, to a lesser extent, non-polluted soil.

The low water solubility and moderate vapour pressure of white spirit (Stoddard solvent) suggest that volatilization and subsequent photo-oxidation are important processes for abiotic degradation in the atmosphere.

The octanol/water partition coefficient (log Pow) of white spirit (17% v/v aromatics) has been found to be 3.5 to 6.4.

This indicates a moderate potential for bioaccumulation by organisms from water and a likelihood of partitioning to fat within organisms.

Section 13 - Disposal Considerations**Disposal:** This product may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to separate the contamination in some way. Only if neither of these options is suitable, we suggest that you contact a specialist disposal company to arrange disposal. Disposal by untrained personnel may cause a dangerous incident.**SAFETY DATA SHEET**



Section 14 - Transport Information

Dangerous according to Australian Dangerous Goods (ADG) Code, IATA and IMDG/IMSBC criteria.

UN Number: 2810, TOXIC LIQUID, ORGANIC, N.O.S. (Methylcyclopentadienyl manganese tricarbonyl)

Hazchem Code: 2X

Special Provisions: 223, 274

Limited quantities: ADG 7 specifies a Limited Quantity value of 5 L for this class of product.

Dangerous Goods Class: Class 6.1: Toxic Substances.

Packing Group: III

Packing Instruction: P001, IBC03, LP01

Class 6 Toxic Substances shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 3 (Flammable Liquids where the Flammable Liquid is nitromethane), 5.1 (Oxidising Agents where the Toxic Substances are Fire Risk Substances), 5.2 (Organic Peroxides where the Toxic Substances are Fire Risk Substances), 8 (Corrosive Substances where the Toxic Substances are cyanides and the Corrosives are acids), Foodstuffs and foodstuff empties. They may however be loaded in the same vehicle or packed in the same freight container with Classes, 2.1 (Flammable Gases), 2.2 (Non-Flammable, Non-Toxic Gases), 2.3 (Toxic Gases), 3 (Flammable liquids, except where the flammable liquid is nitromethane), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents except where the Toxic Substances are Fire Risk Substances), 5.2 (Organic Peroxides except where the Toxic Substances are Fire Risk Substances), 7 (Radioactive Substances), 8 (Corrosive Substances except where the Toxic Substances are cyanides and the Corrosives are acids), 9 (Miscellaneous Dangerous Goods)

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations.

The following ingredient: Solvent naphtha (petroleum), medium aliphatic, (a liquid hydrocarbon) is mentioned in the SUSMP.

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail (7 th edition)
AICS	Australian Inventory of Chemical Substances
SWA	Safe Work Australia, formerly ASCC and NOHSC
CAS number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (Feb 2016)

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<http://www.kilford.com.au/> Phone (02)9251 4532

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Issued by: Lucas Oil Products of Australia Pty Ltd

Phone: 07 3299 6320 (office hours)

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