

Product Name: SYNERGY 5000

Revision Date: 13Apr2006

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# MATERIAL SAFETY DATA SHEET

## SECTION 1

## PRODUCT AND COMPANY IDENTIFICATION

As of the revision date above, this (M)SDS meets the regulations in New Zealand.

### PRODUCT

**Product Name:** SYNERGY 5000

**Product Description:** Hydrocarbons and Additives

**Product Code:** 19208-86

**Intended Use:** Fuel

### COMPANY IDENTIFICATION

**Supplier:** Mobil Oil New Zealand Pty Ltd  
MOBIL ON THE PARK  
157 LAMBTON QUAY  
WELLINGTON New Zealand

**NATIONAL POISON CENTRE (24hr)**

+64 3 479 7248/ Freephone 0800 764 766

**Product Technical Information**

0800 732 275

**Mobil Oil New Zealand Limited Contact (24hr)**

+64-4-4984 000

## SECTION 2

## HAZARDS IDENTIFICATION

Refer to Section 15 for HSNO classification.

**EU CLASSIFICATION:** | F+; R12 | Carc. Cat. 2; R45 | Mut. Cat. 2; R46 | Repro. Cat. 3; R63 | Xn; R65 | Xi; R38  
| R67 | N; R51/53 |

### PHYSICAL / CHEMICAL HAZARDS

Extremely flammable. Material can release vapours that readily form flammable mixtures. Vapour accumulation could flash and/or explode if ignited. Material can accumulate static charges which may cause an incendiary electrical discharge.

### HEALTH HAZARDS

May cause cancer. May cause heritable genetic damage. Possible risk of harm to the unborn child. Harmful: may cause lung damage if swallowed. Irritating to skin. Vapours may cause drowsiness and dizziness. May be irritating to the eyes, nose, throat, and lungs. May cause central nervous system depression. High-pressure injection under skin may cause serious damage. Prolonged and repeated exposure to benzene may cause serious injury to blood forming organs and is associated with anaemia and to the later development of acute myelogenous leukaemia (AML). Overexposure to n-hexane may cause effects on the peripheral nerves, resulting in weakness or numbness of lower limbs.

### ENVIRONMENTAL HAZARDS

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Note:** This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

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SECTION 3	COMPOSITION / INFORMATION ON INGREDIENTS
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This material is regulated as a preparation.

**Reportable Hazardous Substance(s) or Complex Substance(s)**

Name	CAS#	Concentration*	Symbols/Risk Phrases
Gasoline	86290-81-5	> 99%	F+;R12, Xi;R38, T;Carc. Cat. 2;R45, T;Mut. Cat. 2;R46, Xn;Repro. Cat. 3;R63, Xn;R65, R67, N;R51/53

**Reportable Hazardous Constituent(s) Contained in Complex Substance(s)**

Name	CAS#	Concentration*	Symbols/Risk Phrases
1-Hexene	592-41-6	1 - 5%	Xn;R20, N;R51/53
2,3-DIMETHYLBUTANE	79-29-8	1 - 5%	F;R11, Xi;R38, Xn;R65, R67, N;R51/53
3-METHYLHEXANE	589-34-4	1 - 5%	F;R11, Xi;R38, Xn;R65, R67, N;R50/53
Benzene	71-43-2	< 4%	F;R11, Xi;R36/38, T;Carc. Cat. 1;R45, T;Mut. Cat. 2;R46, T;R48/23/24/25, Xn;R65
Butane	106-97-8	0.1 - 1%	F+;R12
ETHYL BENZENE	100-41-4	1 - 5%	F;R11, Xn;R20
Hexane, 2-methyl-	591-76-4	1 - 5%	F;R11, Xi;R38, Xn;R65, R67, N;R50/53
ISOPENTANE	78-78-4	5 - 10%	F+;R12, Xn;R65, R66, R67, N;R51/53
METHYL-TERT-BUTYL ETHER	1634-04-4	10 - 20%	F;R11, Xi;R38
METHYLCYCLOHEXANE	108-87-2	1 - 5%	F;R11, Xi;R38, Xn;R65, R67, N;R51/53
N-HEXANE	110-54-3	1 - 5%	F;R11, Xi;R38, Xn;R48/20, Xn;Repro. Cat. 3;R62, Xn;R65, R67, N;R51/53
Pentane	109-66-0	1 - 5%	F+;R12, Xn;R65, R66, R67, N;R51/53
Pentane, 2-methyl-	107-83-5	1 - 5%	F;R11, Xi;R38, Xn;R65, R67, N;R51/53
Pentane, 3-methyl-	96-14-0	1 - 5%	F;R11, Xi;R38, Xn;R65, R67, N;R51/53
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)	95-63-6	1 - 5%	R10, Xn;R20, Xi;R36/37/38, N;R51/53
Toluene	108-88-3	20 - 30%	F;R11, Xi;R38, Xn;R48/20, Xn;Repro. Cat. 3;R63, Xn;R65, R67
TRIMETHYL BENZENE	25551-13-7	1 - 5%	R10, Xi;R38
XYLENES	1330-20-7	5 - 10%	R10, Xn;R20/21, Xi;R38

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Note: The concentration of the components shown above may vary substantially. In certain countries, benzene content may be limited to lower levels. Oxygenates such as tertiary-amyl-methyl ether, ethanol, di-isopropyl ether, and ethyl-tertiary-butyl ether may be present. Because of volatility considerations, gasoline vapor may have concentrations of components very different from those of liquid gasoline. The major components of gasoline vapor are: butane, isobutane, pentane, and isopentane. The reportable component percentages, shown in the composition/information on

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ingredients section, are based on API's evaluation of a typical gasoline mixture.

## SECTION 4 FIRST AID MEASURES

### INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

### SKIN CONTACT

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

### EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

### INGESTION

Seek immediate medical attention. Do not induce vomiting.

### NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

### PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE

Benzene- Individuals with liver disease may be more susceptible to toxic effects. Hexane- Individuals with neurological disease should avoid exposure.

## SECTION 5 FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight streams of water

### FIRE FIGHTING

**Fire Fighting Instructions:** Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect personnel attempting to stop a leak. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

**Unusual Fire Hazards:** EXTREMELY FLAMMABLE. Vapour is flammable and heavier than air. Vapour may travel across the ground and reach remote ignition sources, causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

**Hazardous Combustion Products:** Sulphur Oxides, Aldehydes, Oxides of carbon, Smoke, Fume, Incomplete combustion products

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## FLAMMABILITY PROPERTIES

**Flash Point [Method]:** -40C (-40F) [ ASTM D-56]

**Flammable Limits (Approximate volume % in air):** LEL: 1.4 UEL: 7.6

**Autoignition Temperature:** N/D

**Hazchem Code:** 3YE

## SECTION 6

## ACCIDENTAL RELEASE MEASURES

### NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

### PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required, due to toxicity or flammability of the material. See Section 5 for fire fighting information. See Section 3 for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for Personal Protective Equipment.

### SPILL MANAGEMENT

**Land Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapour-suppressing foam may be used to reduce vapour. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapour, but may not prevent ignition in enclosed spaces. Recover by pumping or with suitable absorbent.

**Water Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. Do not confine in area of spill. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

### ENVIRONMENTAL PRECAUTIONS

Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

## SECTION 7

## HANDLING AND STORAGE

### HANDLING

Avoid breathing mists or vapour. Avoid contact with skin. Use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapour may be evolved from heated or agitated material. Do not siphon by mouth. Use only with adequate ventilation. Use proper bonding and/or earthing procedures. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put petrol into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapour and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers,

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calculators, pagers or other electronic devices etc) in or around any fuelling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source).

**Static Accumulator:** This material is a static accumulator.

## STORAGE

Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Storage containers should be earthed and bonded. Drums must be earthed and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters.

## SECTION 8

## EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE LIMIT VALUES

**Exposure limits/standards (Note: Exposure limits are not additive)**

Substance Name	Form	Limit/Standard			Note	Source	Year
1-Hexene		TWA	50 ppm			ACGIH	2005
2,3-DIMETHYLBUTANE		STEL	3500 mg/m3	1000 ppm		New Zealand OELs	2002
2,3-DIMETHYLBUTANE		TWA	1760 mg/m3	500 ppm		New Zealand OELs	2002
2,3-DIMETHYLBUTANE		STEL	1000 ppm			ACGIH	2005
2,3-DIMETHYLBUTANE		TWA	500 ppm			ACGIH	2005
3-METHYLHEXANE		STEL	2050 mg/m3	500 ppm		New Zealand OELs	2002
3-METHYLHEXANE		TWA	1640 mg/m3	400 ppm		New Zealand OELs	2002
3-METHYLHEXANE		STEL	500 ppm			ACGIH	2005
3-METHYLHEXANE		TWA	400 ppm			ACGIH	2005
Benzene		TWA	16 mg/m3	5 ppm	Skin	New Zealand OELs	2002
Benzene		STEL	2.5 ppm		Skin	ACGIH	2005
Benzene		TWA	0.5 ppm		Skin	ACGIH	2005
Butane		TWA	1900 mg/m3	800 ppm		New Zealand OELs	2002
Butane		TWA	1000 ppm			ACGIH	2005
ETHYL BENZENE		STEL	543 mg/m3	125 ppm		New Zealand OELs	2002
ETHYL BENZENE		TWA	434 mg/m3	100 ppm		New Zealand OELs	2002
ETHYL BENZENE		STEL	125 ppm			ACGIH	2005
ETHYL BENZENE		TWA	100 ppm			ACGIH	2005
Gasoline	Vapour.	TWA	300 mg/m3	100 ppm		ExxonMobil	2005
Gasoline		STEL	500 ppm			ACGIH	2005
Gasoline		TWA	300 ppm			ACGIH	2005
Hexane, 2-methyl-		STEL	2050 mg/m3	500 ppm		New Zealand OELs	2002
Hexane, 2-methyl-		TWA	1640 mg/m3	400 ppm		New Zealand OELs	2002
Hexane, 2-methyl-		STEL	500 ppm			ACGIH	2005

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Hexane, 2-methyl-		TWA	400 ppm			ACGIH	2005
ISOPENTANE		TWA	600 ppm			ACGIH	2005
METHYL-TERT-BUTYL ETHER		STEL	275 mg/m3	75 ppm		New Zealand OELs	2002
METHYL-TERT-BUTYL ETHER		TWA	92 mg/m3	25 ppm		New Zealand OELs	2002
METHYL-TERT-BUTYL ETHER		STEL	75 ppm			ExxonMobil	2005
METHYL-TERT-BUTYL ETHER		TWA	25 ppm			ExxonMobil	2005
METHYLCYCLOHEXANE		TWA	1610 mg/m3	400 ppm		New Zealand OELs	2002
METHYLCYCLOHEXANE		TWA	400 ppm			ACGIH	2005
N-HEXANE		TWA	72 mg/m3	20 ppm		New Zealand OELs	2002
N-HEXANE		TWA	50 ppm		Skin	ACGIH	2005
Pentane		STEL	2210 mg/m3	750 ppm		New Zealand OELs	2002
Pentane		TWA	1770 mg/m3	600 ppm		New Zealand OELs	2002
Pentane		TWA	600 ppm			ACGIH	2005
Pentane, 2-methyl-		STEL	3500 mg/m3	1000 ppm		New Zealand OELs	2002
Pentane, 2-methyl-		TWA	1760 mg/m3	500 ppm		New Zealand OELs	2002
Pentane, 2-methyl-		STEL	1000 ppm			ACGIH	2005
Pentane, 2-methyl-		TWA	500 ppm			ACGIH	2005
Pentane, 3-methyl-		STEL	3500 mg/m3	1000 ppm		New Zealand OELs	2002
Pentane, 3-methyl-		TWA	1760 mg/m3	500 ppm		New Zealand OELs	2002
Pentane, 3-methyl-		STEL	1000 ppm			ACGIH	2005
Pentane, 3-methyl-		TWA	500 ppm			ACGIH	2005
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)		TWA	123 mg/m3	25 ppm		New Zealand OELs	2002
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)		TWA	25 ppm			ACGIH	2005
Toluene		TWA	188 mg/m3	50 ppm	Skin	New Zealand OELs	2002
Toluene		TWA	50 ppm		Skin	ACGIH	2005
TRIMETHYL BENZENE		TWA	123 mg/m3	25 ppm		New Zealand OELs	2002
TRIMETHYL BENZENE		TWA	25 ppm			ACGIH	2005
XYLENES		TWA	217 mg/m3	50 ppm		New Zealand OELs	2002
XYLENES		STEL	150 ppm			ACGIH	2005
XYLENES		TWA	100 ppm			ACGIH	2005

### Tolerable exposure limits

Substance Name	Medium	Limit
Benzene	Air	10 ug/m <sup>3</sup>
Benzene	Water	10 ug/l
Toluene	Air	400 ug/m <sup>3</sup>
Toluene	Water	800 ug/l
XYLENES	Air	870 ug/m <sup>3</sup>
XYLENES	Water	600 ug/l

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NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

## ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

## PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation. Organic vapour

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove manufacturer data. Work conditions can greatly effect glove durability; inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

If prolonged or repeated contact is likely, chemical-resistant gloves are recommended. If contact with forearms is likely, wear gauntlet-style gloves. Nitrile, Viton

**Eye Protection:** If contact is likely, safety glasses with side shields are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

If prolonged or repeated contact is likely, chemical, and oil resistant clothing is recommended.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

## ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

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**Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.**

## GENERAL INFORMATION

**Physical State:** Liquid

**Colour:** red

**Odour:** petroleum/solvent

**Odour Threshold:** N/D

## IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 15 C):** 0.78

**Flash Point [Method]:** -40C (-40F) [ ASTM D-56]

**Flammable Limits (Approximate volume % in air):** LEL: 1.4 UEL: 7.6

**Autoignition Temperature:** N/D

**Boiling Point / Range:** > 20C (68F)

**Vapour Density (Air = 1):** 3 at 101 kPa

**Vapour Pressure:** 53.2 kPa (400 mm Hg) at 20 C

**Evaporation Rate (N-Butyl Acetate = 1):** N/D

**pH:** N/A

**Log Pow (n-Octanol/Water Partition Coefficient):** > 1

**Solubility in Water:** Negligible

**Viscosity:** <1 cSt (1 mm<sup>2</sup>/sec) at 40 C

**Oxidising properties:** See Sections 3, 15, 16.

## OTHER INFORMATION

**Freezing Point:** N/D

**Melting Point:** N/A

## SECTION 10 STABILITY AND REACTIVITY

**STABILITY:** Material is stable under normal conditions.

**CONDITIONS TO AVOID:** Avoid heat, sparks, open flames and other ignition sources.

**MATERIALS TO AVOID:** Alkalies, Halogens, Strong Acids, Strong oxidisers

**HAZARDOUS DECOMPOSITION PRODUCTS:** Material does not decompose at ambient temperatures.

**HAZARDOUS POLYMERIZATION:** Will not occur.

## SECTION 11 TOXICOLOGICAL INFORMATION

### Acute Toxicity

Route of Exposure	Conclusion / Remarks
<b>INHALATION</b>	
Toxicity (Rat): LC50 > 5000 mg/m <sup>3</sup>	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Elevated temperatures or mechanical action may form vapours, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs. Based on assessment of the components.
<b>INGESTION</b>	



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Toxicity (Rat): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
<b>Skin</b>	
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Moderately irritating to skin with prolonged exposure. Based on test data for structurally similar materials.
<b>Eye</b>	
Irritation: Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

## CHRONIC/OTHER EFFECTS

### For the product itself:

Laboratory animal studies have shown that prolonged and repeated inhalation exposure to light hydrocarbon vapours in the same boiling range as this product can produce adverse kidney effects in male rats. However, these effects were not observed in similar studies with female rats, male and female mice, or in limited studies with other animal species. Additionally, in a number of human studies, there was no clinical evidence of such effects at normal occupational levels. In 1991, The U.S. EPA determined that the male rat kidney is not useful for assessing human risk. Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Gasoline unleaded: Carcinogenic in animal tests. Chronic inhalation studies resulted in liver tumours in female mice and kidney tumours in male rats. Neither result considered significant for human health risk assessment by the United States EPA and others. Did not cause mutations in-vitro or in-vivo. Negative in inhalation developmental studies and reproductive tox studies. Inhalation of high concentrations in animals resulted in reversible central nervous system depression, but no persistent toxic effect on the nervous system. Non-sensitizing in test animals. Caused nerve damage in humans from abusive use (sniffing).

### Contains:

2-Methylpentane: Repeated exposure to high concentrations of 2-methylpentane produced adverse effects to the kidney of male rats only. These effects are believed to be species specific and are not relevant to humans. BENZENE: Caused cancer (leukemia), damage to the blood-producing system, and serious blood disorders from prolonged, high exposure based on human epidemiology studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus in laboratory animal studies. Gasoline unleaded: Carcinogenic in animal tests. Chronic inhalation studies resulted in liver tumours in female mice and kidney tumours in male rats. Neither result considered significant for human health risk assessment by the United States EPA and others. Did not cause mutations in-vitro or in-vivo. Negative in inhalation developmental studies and reproductive tox studies. Inhalation of high concentrations in animals resulted in reversible central nervous system depression, but no persistent toxic effect on the nervous system. Non-sensitizing in test animals. Caused nerve damage in humans from abusive use (sniffing). Methyl tertiary butyl ether (MTBE): Carcinogenic in animal tests. Inhalation exposure to high concentrations resulted in higher than expected mortality in male mice due to urinary tract obstructions and female mice displayed benign liver tumours. Inhalation exposure to high concentrations resulted in higher than expected mortality in male rats due to progressive kidney damage as well as increased benign and malignant kidney tumours, and benign testicular tumours. Did not cause mutations in-vitro or in-vivo. Rabbits exposed to high vapour concentrations did not have any offspring with adverse developmental effects. Mice exposed to high vapour concentrations (maternally toxic) had offspring with embryo/fetal toxicity and birth defects. Rats exposed to high vapour concentrations did not display any treatment-related effects in a two generation reproduction study. The significance of the animal findings at high exposures are not believed to be directly related to potential human health hazards in the workplace. N-HEXANE: Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially irreversible damage to the peripheral nervous system (e.g. fingers, feet, arms, legs, etc.).

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Simultaneous exposure to Methyl Ethyl Ketone (MEK) or Methyl Isobutyl Ketone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system. n-Hexane has been shown to cause testicular damage at high doses in male rats. The relevance of this effect for humans is unknown. TOLUENE : Concentrated, prolonged or deliberate inhalation may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals (> 1500 ppm) have been reported to cause adverse fetal developmental effects. TRIMETHYLBENZENE: Long-term inhalation exposure of trimethylbenzene caused effects to the blood in laboratory animals. Ethylbenzene: Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

Additional information is available by request.

**IARC Classification:**

**The Following Ingredients are Cited on the Lists Below:**

Chemical Name	CAS Number	List Citations
Benzene	71-43-2	1
ETHYL BENZENE	100-41-4	3
Gasoline	86290-81-5	3

--REGULATORY LISTS SEARCHED--

1 = IARC 1

2 = IARC 2A

3 = IARC 2B

**SECTION 12**

**ECOLOGICAL INFORMATION**

The information given is based on data available for the material, the components of the material, and similar materials.

**ECOTOXICITY**

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

**MOBILITY**

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Less volatile component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

**PERSISTENCE AND DEGRADABILITY**

**Biodegradation:**

Majority of components -- Expected to be inherently biodegradable

**Atmospheric Oxidation:**

More volatile component -- Expected to degrade rapidly in air

**BIOACCUMULATION POTENTIAL**

Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

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## ENVIRONMENTAL EXPOSURE LIMITS

Substance Name	Medium	Limit
Benzene	Water	2000 ug/l
Toluene	Water	330 ug/l
XYLENES	Water	340 ug/l

## SECTION 13

## DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

## DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

**Empty Container Warning** (where applicable): Empty containers may retain residue and can be dangerous. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

## SECTION 14

## TRANSPORT INFORMATION

### LAND

**Proper Shipping Name:** MOTOR SPIRIT or GASOLINE or PETROL

**Hazard Class:** 3

**Hazchem Code:** 3YE

**UN Number:** 1203

**Packing Group:** II

**Label(s) / Mark(s):** 3

### SEA (IMDG)

**Proper Shipping Name:** MOTOR SPIRIT or GASOLINE or PETROL

**Hazard Class & Division:** 3

**EMS Number:** F-E, S-E

**UN Number:** 1203

**Packing Group:** II

**Label(s):** 3

**Transport Document Name:** MOTOR SPIRIT or GASOLINE or PETROL, 3, UN1203, PG II, (-40°C c.c.)

### AIR (IATA)

**Proper Shipping Name:** Gasoline

**Hazard Class & Division:** 3

**UN Number:** 1203

**Packing Group:** II

**Label(s):** 3

**Transport Document Name:** GASOLINE, 3, UN1203, PG II

Product Name: SYNERGY 5000

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## SECTION 15

## REGULATORY INFORMATION

**Material is dangerous as defined by the EU Dangerous Substances/Preparations Directives.**

**CLASSIFICATION:** Extremely flammable. Category 2 Carcinogen. Category 2 Mutagen. Category 3 Toxic to reproduction. Harmful. Irritant. Dangerous for the environment.

### EU LABELING:

**Symbol:** F+, T, N



Extremely flammable.



Dangerous for the environment.

**Nature of Special Risk:** R12; Extremely flammable. R45; May cause cancer. R46; May cause heritable genetic damage. R63; Possible risk of harm to the unborn child. R65; Harmful: may cause lung damage if swallowed. R38; Irritating to skin. R67; Vapours may cause drowsiness and dizziness. R51/53; Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety Advice:** S2; Keep out of the reach of children. S16; Keep away from sources of ignition - No smoking. S23; Do not breathe vapour. S23; Do not breathe gas/fumes/vapour/spray S24; Avoid contact with skin. S29; Do not empty into drains. S43; In case of fire use carbon dioxide (CO<sub>2</sub>), foam, dry chemical, or water fog. S45; In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S53; Avoid exposure - obtain special instructions before use. S61; Avoid release to the environment. Refer to special instructions/safety data sheets. S62; If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

## REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

**This material has been classified according to the Environmental Risk Management Authority (ERMA) under ERMA Approval Code: HSR001445**

### HSNO Hazard Classification:

- 3.1A - Flammable liquids: very high hazard
- 6.1E - Acutely toxic
- 6.3B - Mildly irritating to the skin.
- 6.7B - Suspected human carcinogens.
- 9.1B - Ecotoxic in the aquatic environment.

**The material is regulated under the NZS:5433.1999 Transport of Dangerous Goods on Land.**

**Complies with the following national/regional chemical inventory requirements:** AICS, IECSC, DSL, EINECS, ENCS, KECI, PICCS, TSCA

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<b>SECTION 16</b>	<b>OTHER INFORMATION</b>
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**N/D = Not determined, N/A = Not applicable**

**KEY TO THE RISK CODES CONTAINED IN SECTION 2 AND 3 OF THIS DOCUMENT (for information only):**

- R10; Flammable.
- R11; Highly flammable.
- R12; Extremely flammable.
- R20; Harmful by inhalation.
- R21; Harmful in contact with skin.
- R36; Irritating to eyes.
- R37; Irritating to respiratory system.
- R38; Irritating to skin.
- R45; May cause cancer.
- R46; May cause heritable genetic damage.
- R48/20; Harmful: danger of serious damage to health by prolonged exposure through inhalation.
- R48/23; Toxic: danger of serious damage to health by prolonged exposure through inhalation.
- R48/24; Toxic: danger of serious damage to health by prolonged exposure in contact with skin.
- R48/25; Toxic: danger of serious damage to health by prolonged exposure if swallowed.
- R50/53; Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R51/53; Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R62; Possible risk of impaired fertility.
- R63; Possible risk of harm to the unborn child.
- R65; Harmful: may cause lung damage if swallowed.
- R66; Repeated exposure may cause skin dryness or cracking.
- R67; Vapours may cause drowsiness and dizziness.

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

No revision information is available.

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DGN: 2029949XNZ (1011090)  
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**\*\*End of (M)SDS\*\***