

# SAFETY DATA SHEET



Opal

## Section 1. Identification

**GHS product identifier** Opal  
**Product code** 0000003434  
**SDS no.** 0000003434  
**Historic SDS no.** CAS5C

### Relevant identified uses of the substance or mixture and uses advised against

**Use of the substance/  
mixture**  Use only as a motor fuel for spark ignition engines. NOT for aviation use. Should NOT be used as a solvent nor cleaning agent.  
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

### **Manufacturer**

**Supplier** BP Australia Pty Ltd  
Level 17, 717 Bourke Street  
Docklands, Victoria 3008  
ABN 53 004 085 616

www.bp.com.au

Technical Helpline Number: 1300 139 700

### **EMERGENCY TELEPHONE NUMBER**

1800 638 556

## Section 2. Hazard(s) identification

**Classification of the  
substance or mixture** FLAMMABLE LIQUIDS - Category 1  
SKIN CORROSION/IRRITATION - Category 2  
GERM CELL MUTAGENICITY - Category 1B  
CARCINOGENICITY - Category 1B  
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) -  
Category 3  
ASPIRATION HAZARD - Category 1

### GHS label elements

#### **Hazard pictograms**



#### **Signal word**

DANGER

#### **Hazard statements**

H224 - Extremely flammable liquid and vapour.  
H304 - May be fatal if swallowed and enters airways.  
H315 - Causes skin irritation.  
H336 - May cause drowsiness or dizziness.  
H340 - May cause genetic defects.  
H350 - May cause cancer.

#### Precautionary statements

##### **General**

P102 - Keep out of reach of children.  
P101 - If medical advice is needed, have product container or label at hand.

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## Section 2. Hazard(s) identification

<b>Prevention</b>	<p>P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P271 - Use only outdoors or in a well-ventilated area. P261 - Avoid breathing vapour. P264 - Wash hands thoroughly after handling.</p>
<b>Response</b>	<p>P308 + P313 - IF exposed or concerned: Get medical attention. P304 + P340, P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. P301 + P310, P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. P302 + P352 - IF ON SKIN: Wash with plenty of soap and water. P332 + P313 - If skin irritation occurs: Get medical attention.</p>
<b>Storage</b>	<p>P405 - Store locked up. P403 + P233 - Store in a well-ventilated place. Keep container tightly closed. P403 + P235 - Keep cool.</p>
<b>Disposal</b>	<p>P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.</p>
<b>Supplemental label elements</b>	<p>Not applicable.</p>
<b>Other hazards which do not result in classification</b>	<p>Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapour may cause flash fire or explosion.</p>

## Section 3. Composition and ingredient information

**Substance/mixture** Mixture

A complex mixture of volatile hydrocarbons containing paraffins, naphthenes, olefins and aromatics with carbon numbers predominantly between C4 and C12. May contain oxygenates. May also contain small quantities of proprietary performance additives.

Ingredient name	% (w/w)	CAS number
Gasoline	> 99	86290-81-5
Contains:		
toluene	< 3	108-88-3
n-hexane	< 3	110-54-3
Benzene	< 1	71-43-2
tert-butyl methyl ether(MTBE)	< 1	1634-04-4
2-methylpropan-2-ol	< 1	75-65-0
diisopropyl ether	< 1	108-20-3
Polycyclic aromatic hydrocarbons (PAHs)	< 1	mixture

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

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## Section 4. First aid measures

### Description of necessary first aid measures

<b>Eye contact</b>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.
<b>Inhalation</b>	<input checked="" type="checkbox"/> Inhaled, remove to fresh air. Get medical attention. If exposure to vapour, mists or fumes causes drowsiness, headache, blurred vision or irritation of the eyes, nose or throat, remove immediately to fresh air. Keep patient warm and at rest. If any symptoms persist obtain medical advice.
<b>Skin contact</b>	<input checked="" type="checkbox"/> In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Contaminated clothing is a fire hazard. Contaminated leather, particularly footwear, must be discarded. Clean shoes thoroughly before reuse. Get medical attention.
<b>Ingestion</b>	Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

### Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

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

<b>Notes to physician</b>	Treatment should in general be symptomatic and directed to relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.
<b>Specific treatments</b>	No specific treatment.
<b>Protection of first-aiders</b>	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

## Section 5. Firefighting measures

### Extinguishing media

<b>Suitable extinguishing media</b>	In case of fire, use water fog, foam, dry chemical or carbon dioxide extinguisher or spray.
<b>Unsuitable extinguishing media</b>	Do not use water jet.

### Specific hazards arising from the chemical

Extremely flammable liquid and vapour. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. Vapours can form explosive mixtures with air. Vapours are heavier than air and can spread along the ground or float on water surfaces to remote ignition sources. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly-grounded containers. Static accumulation may be significantly increased by the presence of small

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## Section 5. Firefighting measures

<b>Hazardous thermal decomposition products</b>	quantities of water or other contaminants. Liquid will float and may reignite on surface of water. <b>☑</b> Combustion products may include the following: carbon oxides (CO, CO <sub>2</sub> ) (carbon monoxide, carbon dioxide)
<b>Special protective actions for fire-fighters</b>	<b>☑</b> No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
<b>Special protective equipment for fire-fighters</b>	Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
<b>Hazchem code</b>	3YE

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Eliminate all ignition sources.
<b>For emergency responders</b>	Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".
<b>Environmental precautions</b>	<b>☑</b> Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents. If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities. Collect recovered product and other contaminated materials in suitable tanks or containers for recycle, recovery or safe disposal.

### Methods and material for containment and cleaning up

<b>Small spill</b>	Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.
<b>Large spill</b>	Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spill product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

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## Section 6. Accidental release measures

## Section 7. Handling and storage

### Precautions for safe handling

#### Protective measures

Do not fill container while it is in or on a vehicle. Place container on ground when filling and keep nozzle in contact with container.

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Avoid contact of spilt material and runoff with soil and surface waterways. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Restrict flow velocity according to API 2003 (2008), NFPA 77 (2007), and Laurence Britton, "Avoiding Static Ignition Hazards in Chemical Operations". To reduce potential for static discharge, ensure that all equipment is properly grounded and bonded and meets appropriate electrical classification requirements.

#### Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

#### Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Light hydrocarbon vapours can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapour in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapour mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurised fuel pipes, the vapour or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate.

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## Section 7. Handling and storage

Dispose of safely immediately after use.

## Section 8. Exposure controls and personal protection

### [Control parameters](#)

### [Occupational exposure limits](#)

Ingredient name	Exposure limits
Gasoline	<p><b>ACGIH TLV (United States).</b>                      TWA: 300 ppm 8 hours. Issued/Revised: 5/1996                      TWA: 890 mg/m<sup>3</sup> 8 hours. Issued/Revised: 5/1996                      STEL: 500 ppm 15 minutes. Issued/Revised: 5/1996                      STEL: 1480 mg/m<sup>3</sup> 15 minutes. Issued/Revised: 5/1996</p>
Toluene	<p><b>Safe Work Australia (Australia). Absorbed through skin.</b>                      STEL: 574 mg/m<sup>3</sup> 15 minutes. Issued/Revised: 8/2005                      STEL: 150 ppm 15 minutes. Issued/Revised: 8/2005                      TWA: 191 mg/m<sup>3</sup> 8 hours. Issued/Revised: 8/2005                      TWA: 50 ppm 8 hours. Issued/Revised: 8/2005</p>
n-hexane	<p><b>Safe Work Australia (Australia).</b>                      TWA: 72 mg/m<sup>3</sup> 8 hours. Issued/Revised: 11/2001                      TWA: 20 ppm 8 hours. Issued/Revised: 11/2001</p>
Polycyclic aromatic hydrocarbons (PAHs)	<p><b>Safe Work Australia (Australia).</b>                      TWA: 0.2 mg/m<sup>3</sup> 8 hours.</p>
tert-butyl methyl ether	<p><b>Safe Work Australia (Australia).</b>                      STEL: 275 mg/m<sup>3</sup> 15 minutes. Issued/Revised: 4/2002                      STEL: 75 ppm 15 minutes. Issued/Revised: 4/2002                      TWA: 92 mg/m<sup>3</sup> 8 hours. Issued/Revised: 4/2002                      TWA: 25 ppm 8 hours. Issued/Revised: 4/2002</p>
2-methylpropan-2-ol	<p><b>Safe Work Australia (Australia).</b>                      STEL: 455 mg/m<sup>3</sup> 15 minutes. Issued/Revised: 5/1995                      STEL: 150 ppm 15 minutes. Issued/Revised: 5/1995                      TWA: 303 mg/m<sup>3</sup> 8 hours. Issued/Revised: 5/1995                      TWA: 100 ppm 8 hours. Issued/Revised: 5/1995</p>
diisopropyl ether	<p><b>Safe Work Australia (Australia).</b>                      STEL: 1300 mg/m<sup>3</sup> 15 minutes. Issued/Revised: 5/1995                      STEL: 310 ppm 15 minutes. Issued/Revised: 5/1995                      TWA: 1040 mg/m<sup>3</sup> 8 hours. Issued/Revised: 5/1995</p>

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## Section 8. Exposure controls and personal protection

Benzene

TWA: 250 ppm 8 hours. Issued/Revised:  
5/1995

### Safe Work Australia (Australia).

TWA: 3.2 mg/m<sup>3</sup> 8 hours. Issued/Revised:  
4/2003

TWA: 1 ppm 8 hours. Issued/Revised:  
4/2003

### Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.

Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.

The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

### Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Appropriate techniques should be used to remove potentially contaminated clothing.

Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection

Chemical splash goggles.

#### Skin protection

##### Hand protection

Wear chemical resistant gloves.

Do not re-use gloves. Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture). Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis. The frequency of replacement will depend upon the circumstances of use.

**Recommended:** Gloves made from fluoroelastomer resistant to hydrocarbons and a wide range of chemicals.

Wear a chemically resistant multi-layer laminate inner glove inside an outer nitrile glove. The purpose of the outer glove is to protect the inner glove from cuts and mechanical damage. The presence of aromatic hydrocarbons in the product will significantly shorten the length of time that nitrile gloves will provide protection. Do not re-use nitrile gloves if exposed to aromatic hydrocarbons.

#### Skin protection

Use of protective clothing is good industrial practice.

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when

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## Section 8. Exposure controls and personal protection

cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

Wear suitable protective clothing.

Footwear highly resistant to chemicals.

When there is a risk of ignition wear inherently fire resistant protective clothes and gloves.

When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static.

When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required.

Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes.

### Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

### Respiratory protection

Use with adequate ventilation.

If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product.

**Recommended:** If ventilation is inadequate, use respirator that will protect against organic vapour and dust/mist. (Filter type: P1)

### Refer to standards:

Respiratory protection:AS/NZS 1715 and AS/NZS 1716

Gloves:AS/NZS 2161.1

Eye protection:AS/NZS 1336 and AS/NZS 1337

## Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### Appearance

#### Physical state

Liquid. Clear and Bright

#### Colour

Purple.

#### Odour

Hydrocarbon.

#### Odour threshold

Not available.

#### pH

Not available.

#### Melting point

Not available.

#### Boiling point, initial boiling point, and boiling range

30 to 210°C (86 to 410°F)

#### Flash point

Closed cup: -40°C (-40°F)

#### Evaporation rate

Not available.

Not applicable. Based on - Physical state

#### Lower and upper explosion limit/flammability limit

Lower: 1.4%

Upper: 7.6%

#### Vapour pressure

30 to 100 kPa (225 to 750 mm Hg)

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## Section 9. Physical and chemical properties

Ingredient name	Vapour Pressure at 20 °C			Vapour pressure at 50 °C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
toluene	23.17	3.1	OECD 104			
n-hexane	127.51	17				
tert-butyl methyl ether	247.5	33				
2-methylpropan-2-ol	40.6	5.4				
diisopropyl ether	119.26	15.9				

<b>Relative vapour density</b>	1 [Air = 1]
<b>Relative density</b>	Not available.
<b>Density</b>	700 kg/m <sup>3</sup> (0.7 g/cm <sup>3</sup> ) at 15°C
<b>Solubility</b>	insoluble in water.
<b>Miscible with water</b>	No.
<b>Partition coefficient: n-octanol/water</b>	Not applicable.
<b>Auto-ignition temperature</b>	>350°C (>662°F)
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Kinematic: 0.4 to 0.55 mm <sup>2</sup> /s (0.4 to 0.55 cSt) at 40°C
<b>Particle characteristics</b>	
<b>Median particle size</b>	Not applicable.

## Section 10. Stability and reactivity

<b>Reactivity</b>	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
<b>Chemical stability</b>	The product is stable.
<b>Possibility of hazardous reactions</b>	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.
<b>Conditions to avoid</b>	Avoid all possible sources of ignition (spark or flame). Avoid excessive heat.
<b>Incompatible materials</b>	Reactive or incompatible with the following materials: oxidising materials.
<b>Hazardous decomposition products</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Gasoline	Category 3	Not applicable.	Narcotic effects
toluene	Category 3	Not applicable.	Narcotic effects
n-hexane	Category 3	Not applicable.	Narcotic effects
2-methylpropan-2-ol	Category 3	Not applicable.	Respiratory tract irritation
diisopropyl ether	Category 3	Not applicable.	Narcotic effects
Benzene	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

#### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
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## Section 11. Toxicological information

Toluene	Category 2	-	hearing organs
n-hexane	Category 2	inhalation	peripheral nervous system
Benzene	Category 1	-	blood system

### Aspiration hazard

#### Name

Gasoline  
toluene  
n-hexane

#### Result

ASPIRATION HAZARD - Category 1  
ASPIRATION HAZARD - Category 1  
ASPIRATION HAZARD - Category 1

### Information on likely routes of exposure

Routes of entry anticipated: Dermal, Inhalation.

### Potential acute health effects

#### Eye contact

No known significant effects or critical hazards.

#### Inhalation

Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

#### Skin contact

Causes skin irritation.

#### Ingestion

Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

### Symptoms related to the physical, chemical and toxicological characteristics

#### Eye contact

Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

#### Inhalation

Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness

#### Skin contact

Adverse symptoms may include the following:  
irritation  
redness

#### Ingestion

Adverse symptoms may include the following:  
nausea or vomiting

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Eye contact

Vapour, mist or fume may cause eye irritation. Exposure to vapour, mist or fume may cause stinging, redness and watering of the eyes.

#### Inhalation

May be harmful by inhalation after often repeated exposure. Vapour, mist or fume may irritate the nose, mouth and respiratory tract.

#### Skin contact

Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

#### Ingestion

If swallowed, may irritate the mouth, throat and digestive system. If swallowed, may cause abdominal pain, stomach cramps, nausea, vomiting, diarrhoea, dizziness and drowsiness.

#### General

This product contains n-hexane. Overexposure to n-hexane may cause progressive and potentially irreversible damage to the peripheral nervous system, particularly in the arms and legs. Animal studies have also shown that n-hexane overexposure may cause testicular injury. However, animal studies conducted with commercial hexane, containing 53% n-hexane, showed neither peripheral nervous system damage nor testicular injury at inhalation exposures up to 9000 ppm. Solvent "sniffing" (abuse) or intentional overexposure to vapours can produce serious

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## Section 11. Toxicological information

### Carcinogenicity

central nervous system effects, including unconsciousness, and possibly death.

### Mutagenicity

May cause cancer. Risk of cancer depends on duration and level of exposure.

### Teratogenicity

May cause genetic defects.

### Developmental effects

No known significant effects or critical hazards.

### Fertility effects

No known significant effects or critical hazards.

No known significant effects or critical hazards.

### Other information

Petrol - Excess exposure to vapors may produce headaches, dizziness, nausea, drowsiness, irritation of eyes, nose and throat and central nervous system depression. Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Inhalation of unleaded gasoline vapors did not produce birth defects in laboratory animals. Ingestion of this material can cause gastrointestinal irritation and diarrhea.

In a long-term inhalation study of whole unleaded gasoline vapors, exposure-related kidney damage and kidney tumors were observed in male rats. Similar kidney effects were not seen in female rats or in mice. At the highest exposure level (2056 ppm), female mice had an increased incidence of liver tumors. Results from subsequent scientific studies have shown that a broad variety of chemicals cause these kidney effects only in the male rat. Further studies have discovered the means by which the physiology of the male rat uniquely predispose it to these effects. Consequently, the Risk Assessment Forum of the Environmental Protection Agency has recognized that these responses are not predictive of a human health hazard. The liver tumors that were increased in the high-dose female mice are likewise of questionable significance because of their high spontaneous occurrence even without chemical exposure and because the rate of their occurrence is accelerated by a broad spectrum of chemicals not commonly considered to be carcinogens (e.g., phenobarbital). Thus, the significance of the mouse liver tumor response in terms of human health is questionable.

Gasoline is a complex mixture of hydrocarbons and contains benzene (typically no more than 2 volume%), toluene, and xylene. Chronic exposure to high levels of benzene has been shown to cause cancer (leukemia) in humans and other adverse blood effects (anemia). Benzene is considered a human carcinogen by IARC, NTP and OSHA. Over exposure to xylene and toluene can cause irritation to the upper respiratory tract, headache and narcosis. Some liver damage and lung inflammation were seen in chronic studies on xylene in guinea pigs but not in rats.

Solvent "sniffing" (abuse) or intentional overexposure to vapors can produce serious central nervous system effects, including unconsciousness, and possibly death.

Benzene: Acute toxicity of benzene results primarily from depression of the central nervous system (CNS). Inhalation of concentrations over 50 ppm can produce headache, lassitude, weariness, dizziness, drowsiness, or excitation. Exposure to very high levels can result in unconsciousness and death.

Benzene: Long-term overexposure to benzene has been associated with certain types of leukemia in humans. In addition, the International Agency for Research on Cancer (IARC), the National Toxicology Program, and OSHA consider benzene to be a human carcinogen. Chronic exposures to high levels of benzene have been reported to cause adverse blood effects including anemia. Benzene exposure can occur by inhalation and absorption through the skin. Inhalation and forced feeding studies of benzene in laboratory animals have

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## Section 11. Toxicological information

produced a carcinogenic response in a variety of organs, including possibly leukemia, other adverse effects on the blood, chromosomal changes and some effects on the immune system. Exposure to benzene at levels up to 300 ppm did not produce birth defects in animal studies; however, exposure to higher dosage levels resulted in a reduction of body weight of the rat pups (fetotoxicity). Changes in the testes have been observed in mice exposed to benzene at 300 ppm, but reproductive performance was not altered in rats exposed to benzene at the same level. Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this material.

**Toluene:** Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this material. Deliberate inhalation of high concentrations of toluene has been linked to damage of the brain, liver and kidney. Inhalation of very high concentrations of toluene, such as in cases of solvent abuse, has resulted in sudden death which may be a result of cardiac arrhythmia or central nervous system depression. Mental and/or growth retardation has been reported in children of women who deliberately inhale toluene during pregnancy (usually at thousands of ppm). Foetal developmental toxicity was observed when pregnant rats were exposed to toluene at levels of 1500 ppm. Maternal toxicity was also observed at this concentration. Prolonged, high level exposure to toluene in laboratory animals has resulted in hearing loss. Exposure studies in rats have resulted in adverse effects on the kidney, liver and central nervous system. Studies in occupationally exposed individuals indicate that toluene exposure has been associated with impaired colour vision and decreased performance in some neurobehavioural tests. There are occupational studies which report an association between inhalation exposure to toluene and adverse effects on reproduction including spontaneous abortion. The methodology of these studies and the reliability of the results have been questioned. In a two-generation study in rats, inhalation of toluene at levels up to 2000 ppm did not produce adverse effects on fertility or reproductive performance.

**Xylenes:** Xylene has been reported to cause central nervous system effects at concentrations above the recommended exposure limit. Xylene vapour becomes irritating at relatively high levels. In one study, eye irritation was reported at exposures of 460 ppm and in one person at 230 ppm after 15 minutes. In another study, no one reported eyes, nose and throat irritation at mixed xylene exposures up to 230 ppm for 30 minutes. Dermal LD50 is expected to be greater than 10g/kg in rabbits, based on test results from similar materials.

Mixed xylenes caused slight hearing loss in rats exposed to 800 ppm in the air for 14 hours/day for six weeks. There is no information available for lower concentrations; however, similar chemicals that have caused these hearing effects at similar concentrations have not caused effects at lower concentrations.

Pregnant animals exposed to xylene or its isomers have been reported to cause development toxicity in rodents when exposed by inhalation. The developmental effects observed consisted of delayed development and minor skeletal variations, but no malformations. Because of the high exposure levels used in these studies, we do not believe that these results imply an increased risk of reproductive toxicity to workers exposed to xylene levels at or below the exposure limits.

Xylene and its isomers are not genotoxic.

Technical grade xylene has been tested in a National Toxicology Program carcinogenicity study in rats and mice dosed orally for two years. There was no evidence of carcinogenicity.

**Ethylbenzene:** The National Toxicology Program (NTP) conducted a 13-week inhalation study with male and female rats and mice at exposure concentrations ranging from 100 to 1000 ppm ethylbenzene. No rats or mice died during the study.

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Kidney, liver, and lung weights were increased in the exposed rats, while weight increases were observed only in the livers of exposed mice. Treatment-related histopathologic changes were not observed in any tissues of rats and mice. NTP also exposed male and female rats and mice by inhalation to 0, 75, 250, or 750 ppm ethylbenzene for 2 years. There was a statistically significant increase in the number of kidney tumors in male and female rats at 750 ppm. There were also increased incidences of lung tumors in male mice and liver tumors in female mice that were statistically significant at 750 ppm. Except for the male rat kidney tumors, the incidence of the tumors were within the range observed for non-exposed animals from other studies conducted by NTP. The significance of these findings to humans is unknown. Ethylbenzene is not genotoxic. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and found it to be possibly carcinogenic to humans (Group 2B).

Ethylbenzene is not genotoxic.

Naphthalene has been reported to cause developmental toxicity in mice after oral exposure to relatively high dose levels, but developmental toxicity was not observed in NTP (National Toxicology Program) sponsored studies in rats and rabbits. Ingestion or inhalation of naphthalene can result in hemolysis and other blood abnormalities, and individuals (and infants) deficient in glucose-6-phosphate dehydrogenase may be especially susceptible to these effects. Inhalation of naphthalene may cause headache and nausea. Airborne exposure can result in eye irritation. Naphthalene exposure has been associated with cataracts in animals and humans.

## Section 12. Ecological information

### Persistence and degradability

Expected to be biodegradable. Non-persistent per IMO criteria.

### Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

### Mobility in soil

Soil/water partition coefficient ( $K_{oc}$ )

Not available.

Mobility

Spillages may penetrate the soil causing ground water contamination.

### Other ecological information

Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

## Section 13. Disposal considerations

### Disposal methods

The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with

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## Section 13. Disposal considerations

soil, waterways, drains and sewers.

### Special Precautions for Landfill or Incineration

No additional special precautions identified.

## Section 14. Transport information

	ADG	IMDG	IATA
UN number	UN1203	UN1203	UN1203
UN proper shipping name	MOTOR SPIRIT or GASOLINE or PETROL	<input checked="" type="checkbox"/> MOTOR SPIRIT or GASOLINE or PETROL. Marine pollutant	<input checked="" type="checkbox"/> MOTOR SPIRIT or GASOLINE or PETROL
Transport hazard class(es)	3 	3  	3 
Packing group	II	II	II
Environmental hazards	No.	<input checked="" type="checkbox"/> Yes.	<input checked="" type="checkbox"/> Yes. The environmentally hazardous substance mark is not required.
Additional information	<input checked="" type="checkbox"/> <b>Hazchem code</b> 3YE <b>Initial emergency response guide</b> 14	<input checked="" type="checkbox"/> The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. <b>Emergency schedules</b> F-E, S-E	The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user Not available.

Transport in bulk according to IMO instruments

Proper shipping name

MARPOL Annex 1 rules apply for bulk shipments by sea.  
Category: gasoline and spirits

## Section 15. Regulatory information

### Standard for the Uniform Scheduling of Medicines and Poisons

Not scheduled When packed in containers having capacity of greater than 20 litres.

S5. When packed in containers having capacity of less than 20 litres.

### Model Work Health and Safety Regulations - Scheduled Substances

Ingredient name	Schedule
<input checked="" type="checkbox"/> Benzene	Restricted carcinogen [All uses involving benzene as a feedstock containing more than 50% of benzene by volume; Restricted use - Genuine research or analysis; For spray painting if the substance contains more than 1% by volume]

### Montreal Protocol

Not listed.

### Stockholm Convention on Persistent Organic Pollutants

Not listed.

### Rotterdam Convention on Prior Informed Consent (PIC)

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## Section 15. Regulatory information

Not listed.

### International lists

#### National inventory

#### **REACH Status**

For the REACH status of this product please consult your company contact, as identified in Section 1.

#### **Australia inventory (AIC)**

All components are listed or exempted.

#### **Canada inventory**

At least one component is not listed in DSL but all such components are listed in NDSL.

#### **China inventory (IECSC)**

At least one component is not listed.

#### **Japan inventory (CSCL)**

At least one component is not listed.

#### **Korea inventory (KECI)**

At least one component is not listed.

#### **Philippines inventory (PICCS)**

Not determined.

#### **Taiwan Chemical Substances Inventory (TCSI)**

Not determined.

#### **United States inventory (TSCA 8b)**

At least one component is not listed.

## Section 16. Any other relevant information

### History

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**Date of previous issue** 7/20/2017

**Version** 3

**Prepared by** Product Stewardship

### Key to abbreviations

ADG = Australian Dangerous Goods  
ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
NOHSC = National Occupational Health and Safety Commission  
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]  
STEL = Short term exposure limit  
SUSMP = Standard Uniform Schedule of Medicine and Poisons  
UN = United Nations  
TWA = Time weighted average  
VOC = Volatile Organic Compound  
SADT = Self-Accelerating Decomposition Temperature  
Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

### Procedure used to derive the classification

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## Section 16. Any other relevant information

Classification	Justification
FLAMMABLE LIQUIDS - Category 1	Expert judgment
SKIN CORROSION/IRRITATION - Category 2	Expert judgment
GERM CELL MUTAGENICITY - Category 1B	Expert judgment
CARCINOGENICITY - Category 1B	Expert judgment
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3	Expert judgment
ASPIRATION HAZARD - Category 1	Calculation method

Indicates information that has changed from previously issued version.

### Notice to reader

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