

# Material Safety Data Sheet

Page: 1 of 6

Infosafe No.	ACQFD	Issue Date : May 2004	ISSUED by BPNZ
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Product Name : **Avgas 100**

Classified as hazardous

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

<b>Product Name</b>	Avgas 100
<b>Product Code</b>	AVGAS
<b>Product Use</b>	Fuel for spark ignition aviation engines. Should NOT be used as an on-road fuel, solvent or cleaning agent. Do not use in petrol stoves.
<b>Company Name</b>	BP Oil New Zealand Ltd
<b>Address</b>	20 Customs House Quay, Wellington 1, New Zealand
<b>Telephone Number/Fax</b>	Tel: 64 4 495 5000 Fax: 64 4 495 5400
<b>Other Information</b>	Emergency Tel: 0800 154 666 (Australian Centre of Occupational Health and Safety)  National Poisons Centre telephone no. (24 hours): 0800 POISON (0800 764 766)  MSDS website <a href="http://www.bp.co.nz/business/products/safetydata.html">http://www.bp.co.nz/business/products/safetydata.html</a>

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

<b>Information on Composition</b>	A complex combination of volatile hydrocarbons containing paraffins, olefins and aromatics with carbon numbers predominantly between C4 and C12. CAS No.68425-29-6. May contain small quantities of performance enhancing additives. Hazardous Components The following components, considered by various legislative authorities to be hazardous, may also be present: Benzene CAS No. 71-43-2 < 2% Tetraethyl lead CAS No. 78-00-2 0.05% to 0.15% (0.85 g Pb/L max.)
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## 3. HAZARDS IDENTIFICATION

Classified as a Dangerous Good according to NZS 5433.

Highly flammable liquid. Explosive air/vapour mixtures may form at ambient temperature.  
Vapour is heavier than air and may travel to remote sources of ignition (eg. along drainage systems, in basements etc.).  
Abuse involving wilful inhalation of very high concentrations of vapour, even for short periods, can produce unconsciousness or may be fatal.  
Misuse of product may cause lead poisoning.

## 4. FIRST AID MEASURES

<b>Inhalation</b>	If exposure to vapour, mists, or fumes causes drowsiness, headache, blurred vision or irritation of the eyes, nose or throat, remove the source of contamination or move the victim to fresh air. Ensure airways are clear and have qualified person give oxygen through a facemask if breathing is difficult. Apply artificial respiration if not breathing. Seek medical attention. Unconscious patients must be placed in the recovery position. Monitor breathing and pulse rate and if breathing has failed, or is deemed inadequate, respiration must be assisted, preferably by the mouth-to-mouth method (expired air resuscitation). Administer external cardiac massage if necessary. Seek medical attention immediately.
<b>Ingestion</b>	If swallowed, do not induce vomiting, give a glass of water and contact a doctor or Poisons Information Centre immediately. Except as a deliberate act, the ingestion of large amounts of product is unlikely. If it should occur, do NOT induce vomiting; obtain medical advice.
<b>Skin</b>	Wash skin thoroughly with soap and water as soon as reasonably practicable. Remove heavily contaminated clothing and wash underlying skin. In extreme situations of saturation with this product, drench with water, remove clothing as soon as possible and wash skin with soap and water. Seek medical advice if skin becomes red, swollen or painful.
<b>Eye</b>	Wash eye thoroughly with copious quantities of water, ensuring eyelids are

# Material Safety Data Sheet

Page: 2 of 6

Infosafe No.	ACQFD	Issue Date : May 2004	ISSUED by BPNZ
--------------	-------	-----------------------	----------------

Product Name : **Avgas 100**

Classified as hazardous

**Advice to Doctor** held open. Obtain medical advice if any pain or redness develops or persists. 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.

## 5. FIRE FIGHTING MEASURES

For major fires, call the Fire Brigade immediately. Ensure an escape path is always available from any fire. There is a risk of flashback if sparks or hot surfaces ignite vapour.  
In case of fire, use foam, dry chemical, carbon dioxide, vaporising liquid or water delivered as a fine spray. DO NOT USE water jets.  
Fires in confined spaces should be dealt with by trained personnel wearing approved breathing apparatus.  
Water may be used to cool nearby heat exposed areas/objects/packages.  
Any spillage should be regarded as a potential fire risk.

**Hazardous Combustion Products** Toxic fumes may be evolved on burning or exposure to heat.  
See Stability and Reactivity, Section 10 of this MATERIAL SAFETY DATA Sheet.

## 6. ACCIDENTAL RELEASE MEASURES

As the product has a very low flash point, any spillage or leak is a severe fire and/or explosion hazard.  
Isolate the spillage from all ignition sources including road traffic.  
Ensure good ventilation.  
Evacuate all non-essential personnel from the immediate area.  
Wear protective equipment. (See Exposure Controls/Personal Protection, Section 8 of this MATERIAL SAFETY DATA SHEET for details)  
Contain and recover liquid using sand or other suitable inert absorbent material.  
It is advised that stocks of suitable absorbent material should be held in quantities sufficient to deal with any spillage which may be reasonably anticipated.  
Clean up spilled material immediately.  
Protect drains from potential spills to minimise contamination.  
Do not wash product into drainage system.  
Recovery of large spillages should be effected by specialist personnel.  
Vapour is heavier than air and may travel to remote sources of ignition (eg. along drainage systems, in basements, etc.).  
If spillage has occurred in a confined space, ensure adequate ventilation and check that a safe, breathable atmosphere is present before entry.  
In the case of spillage on water, prevent the spread of product by the use of suitable barrier equipment. Recover product from the surface.  
Protect environmentally sensitive areas and water supplies.  
In the event of spillages, contact the appropriate authorities. Regular surveillance on the location of the spillage should be maintained.

## 7. HANDLING AND STORAGE

**Handling** Ensure good ventilation and avoid, as far as reasonably practicable, the inhalation and contact with vapours, mists or fumes which may be generated during use. If such vapour, mists or fumes are generated, their concentration in the workplace air should be controlled to the lowest reasonably practicable level.  
Avoid contact with eyes. If splashing is likely to occur wear a full face visor or chemical goggles as appropriate.  
Avoid skin contact. Good working practices, high standards of personal hygiene and plant cleanliness must be maintained at all times.  
Do not siphon product by mouth.  
Keep out of the reach of children.  
Whilst using, do not eat, drink or smoke. Wash hands thoroughly after contact.  
Take all necessary precautions against accidental spillage into soil or water.

**Storage** Store and dispense only in well ventilated areas away from heat and sources of ignition.  
Store and use only in equipment/containers designed for use with the product.  
Containers must be properly labelled and kept closed when not in use.

# Material Safety Data Sheet

Infosafe No.	ACQFD	Issue Date : May 2004	ISSUED by BPNZ
--------------	-------	-----------------------	----------------

Product Name : **Avgas 100**

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## Other Information

Do not remove warning labels from containers. Empty packages may retain residual product; retain hazard warning labels on empty packages as a guide to their safe handling, storage and disposal.

Do not enter storage tanks without breathing apparatus and comply with Company requirements for entry into a leaded tank. The tank must be well ventilated and the tank atmosphere has been shown to contain hydrocarbon vapour concentrations below 1% of the lower flammability limit and an oxygen concentration of at least 20% by volume.

Always have sufficient personnel standing by outside the tank with appropriate breathing apparatus and equipment to effect a quick rescue.

Fire Prevention

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.

Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electricity discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Hoses should be electrically continuous and ensure equipment used is properly earthed or bonded to the tank structure.

Explosive air/vapour mixtures may form at ambient temperature.

If fuel 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 soaked rags, paper or material used to absorb spillages, represent a fire hazard and should not be allowed to accumulate. Dispose of safely after use.

Empty containers represent a fire hazard as they may contain remaining flammable residue and vapour. Heating may cause an explosion.

Do not weld, heat or drill this container. Do not introduce an ignition source.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### National Exposure Standards

Ensure good ventilation. Avoid, as far as reasonably practicable, inhalation of vapour, mists or fumes generated during use.

If vapour, mists or fumes are generated, their concentration in the workplace air should be controlled to the lowest reasonably practicable level.

The Occupational Safety and Health Service of the Department of Labour recommend a Workplace Exposure Standard for the following constituents;

Benzene;

WES-TWA: 6 ppm, (16 mg/m<sup>3</sup>) for 8 hr TWA exposure standard.

Petrol;

WES-TWA: 300 ppm, (890 mg/m<sup>3</sup>) for 8 hr TWA exposure standard.

WES-STEL: 500 ppm, (1480 mg/m<sup>3</sup>) for 15 min TWA exposure standard.

Tetraethyl Lead;

WES-TWA: 0.1 mg/m<sup>3</sup> for 8 hr TWA exposure standard.

### Respiratory Protection

If operations are such that exposure to vapour, mist or fume may be anticipated, then suitable approved respiratory equipment should be worn. The use of respiratory equipment must be strictly in accordance with the manufacturers' instructions and any statutory requirements governing its selection and use.

### Body Protection

Wear face visor or goggles in circumstances where eye contact can accidentally occur.

If skin contact is likely, wear impervious protective clothing and/or gloves. Change heavily contaminated clothing as soon as reasonably practicable and launder before re-use. Thoroughly wet down before removing clothing due to the risk of static discharge igniting vapour. Wash any contaminated underlying skin with soap and water.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Odour

Strong

### Boiling Point

40°C to 170°C Test Method: ASTM D 86

### Vapour Pressure

38 kPa to 49 kPa @ 20°C Test Method: ASTM D 323

### Physical State

Mobile Liquid

### Colour

Green

# Material Safety Data Sheet

Infosafe No.	ACQFD	Issue Date : May 2004	ISSUED by BPNZ
--------------	-------	-----------------------	----------------

Product Name : **Avgas 100**

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<b>Density</b>	0.70 kg/L @ 15°C Test Method: ASTM D 1298
<b>Flash Point</b>	< -40°C (PMC) Test Method: ASTM D 93
<b>Flammable Limits LEL</b>	1.4%
<b>Flammable Limits UEL</b>	7.6%
<b>Other Information</b>	Grades: Avgas 100

## 10. STABILITY AND REACTIVITY

<b>Hazardous Polymerization</b>	Hazardous polymerisation reactions will not occur.
<b>Materials to Avoid</b>	Avoid contact with strong oxidizing agents.
<b>Hazardous Decomposition Products</b>	Thermal decomposition can produce a variety of compounds, the precise nature of which will depend on the decomposition conditions. Incomplete combustion/thermal decomposition will generate smoke, carbon dioxide and hazardous gases, which will include carbon monoxide and toxic fumes of lead and lead oxides.
<b>Conditions to Avoid</b>	Products of this type are stable and unlikely to react in a hazardous manner under normal conditions of use. This material is highly flammable.

## 11. TOXICOLOGICAL INFORMATION

<b>Toxicology Information</b>	Abuse involving deliberate inhalation of very high concentrations of vapour, even for short periods, can produce unconsciousness and/or result in sudden fatality.
<b>Inhalation</b>	Toxic by inhalation. Likely to be irritating to the respiratory tract if high concentrations of mist or vapour are inhaled. May cause anorexia, nausea, vomiting, diarrhoea, delirium, nervous irritability, headache, restlessness, pallor, tremor, euphoria, lethargy, insomnia, slurred speech, blurred vision, central nervous system depression (including ataxia, tremor and hypotonia), bradycardia and decreased body temperature.
<b>Ingestion</b>	Toxic if swallowed. Ingestion of this product will irritate the gastric tract causing nausea, vomiting, anorexia, weight loss or diarrhoea. Other symptoms are similar to that for inhalation. Harmful if swallowed; may cause lung damage. Aspiration into the lungs may result in chemical pneumonitis.
<b>Skin</b>	Toxic in contact with skin. After skin absorption of this product, lead poisoning may occur. Symptoms of lead poisoning are similar to that for inhalation.
<b>Eye</b>	May cause eye irritation, redness, tearing, pain, burns, blurred vision and conjunctivitis.
<b>Chronic Effects</b>	It is important to recognise that this product is classified as a Category A1 Carcinogen - Confirmed Human Carcinogen according to the Occupational Safety and Health Service of the Department of Labour. The substance is carcinogenic to humans based on the weight of evidence from epidemiological studies. The chemical benzene is present in low levels, usually below 2 %. Benzene is classified as a human carcinogen, and blood disorders have been reported for workers exposed to high concentrations of benzene over prolonged periods. Exposures must be kept below the national exposure standard. May cause harm to the unborn child. May cause CNS and developmental defects in children of women who have deliberately inhaled very high concentrations of vapour. Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Chronic exposure to this product may cause systemic toxicity, including adverse effects to the following; kidney, liver, spleen, pancreas, lymphoid tissue, pituitary, thyroid, adrenals, thymus and respiratory and CNS effects.

## 12. ECOLOGICAL INFORMATION

<b>Mobility</b>	Spillages may penetrate the soil causing ground water contamination.
<b>Persistence / Degradability</b>	This product is inherently biodegradable.
<b>Bioaccumulation</b>	There is no evidence to suggest bioaccumulation will occur.

# Material Safety Data Sheet

Infosafe No.	ACQFD	Issue Date : May 2004	ISSUED by BPNZ
--------------	-------	-----------------------	----------------

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**Acute Toxicity - Other Organisms** May be harmful to aquatic organisms.  
Spills may form a film on water surfaces causing physical damage to organisms.  
Oxygen transfer could also be impaired.

### 13. DISPOSAL CONSIDERATIONS

Dispose of via an authorised person/licensed waste disposal contractor in accordance with local regulations, or if approved, allowed to degrade in situ. Dispose of product and container carefully and responsibly. Do not dispose of near ponds, ditches, down drains or onto soil.  
Empty packages may contain some remaining product. Hazard warning labels are a guide to the safe handling of empty packages and should not be removed.  
Empty packages represent a fire explosion hazard as they may contain flammable product residues and vapour. Do not weld, heat or drill the container. Heating may cause an explosion.  
Do not introduce an ignition source.  
Materials contaminated with product should be treated as highly flammable.  
Disposal should be in accordance with local regulations.  
Small quantities of spilled liquid may be allowed to evaporate, but the vapour must be dispersed by efficient ventilation.

### 14. TRANSPORT INFORMATION

This material is classified as a Class 3 - Flammable Liquid according to NZS 5433:1999 Transport of Dangerous Goods on Land.  
Must not be loaded in the same freight container or on the same vehicle with:  
- (Class 1) Explosives  
- (Class 2.1) Flammable gases  
- (Class 2.3) Toxic gases  
- (Class 4.2) Spontaneously combustible substances  
- (Class 5.1) Oxidising substances  
- (Class 5.2) Organic peroxides or  
- (Class 7) Radioactive materials unless specifically exempted.  
Must not be loaded with in the same freight container; and on the same vehicle must be separated horizontally by at least 3 metres unless all but one are packed in separate freight containers with:  
- (Class 4.3) Dangerous when wet substances  
Goods of packing group II or III may be loaded in the same freight container or on the same vehicle if transported in segregation devices with:  
- (Class 4.2), Spontaneously combustible substances  
- (Class 4.3), Dangerous when wet substances  
- (Class 5.1), Oxidising substances  
- (Class 5.2) Organic peroxides

**U.N. Number** 1203

**Proper Shipping Name** GASOLINE

**DG Class** 3

**Hazchem Code** 3[Y]E

**Packaging Method** 3.8.3

**Packing Group** II

**Storage and Transport** Marine Transport  
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods (IMDG) Code for transport by sea.

UN-No : 1203  
Class : 3 Flammable Liquid  
Packing group : II  
Proper Shipping Name : GASOLINE  
EmS : 3-07  
Stowage and Segregation Category : E

**Air Transport**  
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

UN-No : 1203  
Class : 3 Flammable Liquid  
Packing group : II  
Proper Shipping Name : GASOLINE

# Material Safety Data Sheet

Page: 6 of 6

Infosafe No.	ACQFD	Issue Date : May 2004	ISSUED by BPNZ
--------------	-------	-----------------------	----------------

Product Name : **Avgas 100**

Classified as hazardous

<b>EPG Number</b>	3.1.001
<b>IERG Number</b>	14
<b>IMO Marine Pollutant</b>	This product is a marine pollutant according to the International Maritime Dangerous Goods (IMDG) Code.

## 15. REGULATORY INFORMATION

This product is classified as a 3.1A - Flammable Liquid: Very High Hazard, according to the Hazardous Substances (Classification) Regulations 2001.

This product is classified as a 6.1E - Substance that is mild acutely toxic, according to the Hazardous Substances (Classification) Regulations 2001.

This product is classified as a 6.3B - Substance that is mildly irritating to the skin, according to the Hazardous Substances (Classification) Regulations 2001.

This product is classified as a 6.7B - Substance that is a suspected human carcinogen, according to the Hazardous Substances (Classification) Regulations 2001.

This product is classified as a 6.8A - Substance that is a known or presumed human reproductive or developmental toxicant, according to the Hazardous Substances (Classification) Regulations 2001.

This product is classified as a 9.1B - Substance that is ecotoxic in the aquatic environment, according to the Hazardous Substances (Classification) Regulations 2001.

## 16. OTHER INFORMATION

**Contact Person/Point** This data sheet and the health, safety and environmental information it contains is considered to be accurate as of the date specified above. We have reviewed any information contained herein which we received from sources outside the BP Group of Companies. However, no warranty or representation, expressed or implied is made as to the accuracy or completeness of the data and information contained in this data sheet.

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