

SAFETY DATA SHEET

AVGAS 100

Infosafe No.: JAS9S
 ISSUED Date : 18/07/2016
 ISSUED by: VIVA ENERGY AUSTRALIA PTY
 LTD (FORMERLY: SHELL COMPANY OF
 AUSTRALIA LTD)

1. IDENTIFICATION

GHS Product Identifier

AVGAS 100

Company Name

VIVA ENERGY AUSTRALIA PTY LTD (FORMERLY: SHELL COMPANY OF AUSTRALIA LTD) (ABN 46 004 610 459)

Address

Level 16, 720 Bourke Street Docklands
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Emergency phone number

1800 651 818 (Australia) / Poisons Information Centre:13 11 26 (Australia)

Recommended use of the chemical and restrictions on use

Low lead content aviation gasoline fuel for piston engined aircraft. This product is intended for use in closed systems only.

Other Names

Name	Product Code
VIVA ENERGY AVIATION GASOLINE	
VIVA ENERGY AVIATION GASOLINE 100LL	
VIVA ENERGY AVIATION GASOLINE 100/130	
AVIATION GASOLINE	

2. HAZARD IDENTIFICATION

GHS classification of the substance/mixture

Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) including Work, Health and Safety Regulations, Australia.

Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

Acute Toxicity - Dermal: Category 3

Acute Toxicity - Inhalation: Category 3

Acute Toxicity - Oral: Category 3

Aspiration Hazard: Category 1

Carcinogenicity category 1B

Flammable Liquids: Category 1

Germ cell mutagenicity category 1B

Hazardous to the Aquatic Environment - Long-Term Hazard: Category 2

Skin Corrosion/Irritation: Category 2

STOT Repeated Exposure: Category 2

STOT Single Exposure: Category 3 (narcotic)

Toxic to Reproduction: Category 1

Signal Word (s)

DANGER

Hazard Statement (s)

H224 Extremely flammable liquid and vapour.
 H301 Toxic if swallowed.
 H304 May be fatal if swallowed and enters airways.
 H311 Toxic in contact with skin.
 H315 Causes skin irritation.
 H331 Toxic if inhaled.
 H336 May cause drowsiness or dizziness.
 H340 May cause genetic defects.
 H350 May cause cancer.
 H360 May damage fertility or the unborn child.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H411 Toxic to aquatic life with long lasting effects.

Pictogram (s)

Flame,Skull and crossbones,Health hazard,Environment

**Precautionary statement – Prevention**

P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
 P233 Keep container tightly closed.
 P240 Ground/bond container and receiving equipment.
 P241 Use explosion-proof electrical/ventilating/lighting/equipment.
 P242 Use only non-sparking tools.
 P243 Take precautionary measures against static discharge.
 P260 Do not breathe dust/fume/gas/mist/vapours/spray.
 P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 P264 Wash contaminated skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P271 Use only outdoors or in a well-ventilated area.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P281 Use personal protective equipment as required.

Precautionary statement – Response

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P308+P313 IF exposed or concerned: Get medical advice/attention.
 P311 Call a POISON CENTER or doctor/physician.
 P312 Call a POISON CENTER or doctor/physician if you feel unwell.
 P314 Get medical advice/attention if you feel unwell.
 P330 Rinse mouth.
 P331 Do NOT induce vomiting.
 P332+P313 If skin irritation occurs: Get medical advice/attention.
 P361 Remove/Take off immediately all contaminated clothing.
 P362 Take off contaminated clothing and wash before reuse.
 P363 Wash contaminated clothing before reuse.
 P370+P378 In case of fire: Use foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only for extinction.
 P391 Collect spillage.

Precautionary statement – Storage

P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P403+P235 Store in a well-ventilated place. Keep cool.
 P405 Store locked up.

Precautionary statement – Disposal

P501 Dispose of contents/container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Information on Composition**

Complex mixture of hydrocarbons consisting of paraffins, cycloparaffins, aromatic and olefinic hydrocarbons with carbon numbers predominantly in the C4 to C12 range. Includes benzene at 0.1 - 5% v/v to 0.1 - 1% v/v. Contains lead alkyl anti-knock additives. Maximum lead concentration: 0.56 g/l. Maximum tetraethyl lead content is 0.125% w/w. May also contain several additives at <0.1% v/v each. This product is dyed for grade identification.

Ingredients

Name	CAS	Proportion
Gasoline, low boiling point naphtha	86290- 81- 5	99- 100 %
TETRAETHYL LEAD	78- 00- 2	0- 0. 125 %

Other Information

This product contains tetraethyl lead which may accumulate in the human body. There are indications from human epidemiological studies that excessive prenatal exposure to tetraethyl lead may cause developmental and neurobehavioural effects in children.

4. FIRST-AID MEASURES**Inhalation**

Avoid becoming a casualty - to protect rescuer, use air viva, oxy-viva or one way mask. Remove affected person from contaminated area - Apply artificial respiration if not breathing. Do not give direct mouth to mouth resuscitation. Resuscitate a in well ventilated area. Seek IMMEDIATE medical attention. If inhaled, remove affected person from contaminated area. Apply artificial respiration if not breathing. Seek medical attention.

Ingestion

Do not induce vomiting. Immediately wash out mouth with water (never give anything by mouth if affected person is semi-conscious or unconscious). Where vomiting occurs naturally have affected person place head below hip level in order to reduce risk of aspiration. Seek immediate medical attention.

Skin

Remove all contaminated clothing immediately. Wash gently and thoroughly with water and non-abrasive soap for 15 minutes. Ensure contaminated clothing is washed before re-use or discard. Seek immediate medical attention.

Eye contact

If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Seek immediate medical attention.

First Aid Facilities

Eyewash, safety shower and normal washroom facilities.

Advice to Doctor

Treat symptomatically.

Other Information

The concentration of lead alkyl compounds present is not significant in the context of treating acute poisoning unless the person had excessive and prolonged exposure to the material.

For advice in an emergency, contact a Poisons Information Centre or a doctor at once. (131 126)

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable Extinguishing Media

Do not use water jets.

Hazards from Combustion Products

Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including a complex mixture of airborne solid and liquid particulates and gases (smoke), carbon monoxide, carbon dioxide, unidentified organic and inorganic compounds.

Specific Hazards Arising From The Chemical

Extremely flammable liquid and vapour. Keep containers and fire-exposed surfaces cool with water spray. Shut off any leak if safe to do so and remove sources of re-ignition. Vapour/air mixtures may ignite explosively. Flashback along the vapour trail may occur.

Runoff to sewer may create fire or explosion hazard.

Hazchem Code

3YE

Decomposition Temperature

Not available

Precautions in connection with Fire

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. In case of fire the product may be violently or explosively reactive. Use water spray to disperse vapours. This product should be prevented from entering drains and watercourses.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Remove all sources of ignition. Evacuate all unprotected personnel. Do not allow contact with skin and eyes. Do not breathe mist/vapour. It is essential to wear self-contained breathing apparatus (S.C.B.A) and full personal protective equipment and clothing to prevent exposure. Avoid exposure to spillage by collecting the material using explosion proof vacuum and transfer into suitable labelled containers for subsequent recycling or disposal. Dispose of waste according to applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Toxic and flammable liquid. Exposure without protection must be prevented. Avoid exposure, contact with skin and eyes. Wear overalls, impervious gloves and safety glasses. DO NOT store or use in confined spaces. Avoid breathing in spray or mists or vapours. Use in designated areas with adequate ventilation. Use approved flammable liquid storage containers in the work area. Prevent release of vapours and mists into workplace air. Keep containers tightly closed. Take precautionary measures against static discharges. Keep material away from sparks, flames and other ignition sources. Do not empty into drains. Ensure a high level of personal hygiene is maintained when using this product, that is, always wash hands before eating, drinking, smoking or using the toilet facilities. Avoid exposure. Do not handle until all safety precautions have been read and understood. It is recommended that pregnant or breastfeeding women should not handle this product unless adequate exposure protection can be assured at all times. Female personnel planning pregnancy should be made aware of the potential risks.

Conditions for safe storage, including any incompatibilities

This material is Toxic and must be stored, handled and maintained according to the appropriate regulations. Limit quantity in storage. Restrict access to storage area. Post appropriate warning signs. Consider leak detection and alarm systems, as required. Structural materials and lighting and ventilation systems in storage area should be corrosion resistant. Store in a cool, dry, well-ventilated area away from sources of ignition, oxidizing agents, strong mineral acids, bases metal and/or water. Keep containers closed when not in use, securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Have appropriate fire extinguishers available in and near the storage area. Take precautions against static electricity discharges. Use proper grounding procedures. Ensure that storage conditions comply with applicable local and national regulations. For information on the design of the storeroom, reference should be made to Australian Standard AS1940 - The storage and handling of flammable and combustible liquids and AS/NZS 4452 The storage and handling of toxic substances.

Recommended Materials

For containers, or container linings use mild steel, stainless steel. Aluminium may also be used for applications where it does not present an unnecessary fire hazard. Examples of suitable materials are: high density polyethylene (HDPE), polypropylene (PP), and Viton (FKM), which have been specifically tested for compatibility with this product. For container linings, use amine-adduct cured epoxy paint. For seals and gaskets use: graphite, PTFE, Viton A, Viton B.

Unsuitable Materials

Some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Examples of materials to avoid are: natural rubber (NR), nitrile rubber (NBR), ethylene propylene rubber (EPDM), polymethyl methacrylate (PMMA), polystyrene, polyvinyl chloride (PVC), polyisobutylene.; However, some may be suitable for glove materials.

Other Information

Ensure that all local regulations regarding handling and storage facilities are followed. In the interests of air safety, aviation fuels are subject to strict quality requirements and product integrity is of paramount importance.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values

No exposure value assigned for this material by Safe Work, Australia. However, the available exposure limits for ingredients are listed below:

Safe Work, Australia Exposure Standards:

Tetraethyl lead

TWA: 0.1 mg/m³

Notices: Sk

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

'Sk' Notice: Absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.

Biological Limit Values

Name: Lead

Determinant: Lead in blood

Value: 30µg/100ml

Sampling time: Not critical

Source: American Conference of Industrial Hygienists (ACGIH)

Appropriate Engineering Controls

This substance is toxic and should be used with a local exhaust ventilation system, drawing vapours away from workers' breathing zone. Provide sufficient ventilation to keep airborne levels below the exposure limits or as low as possible. Where vapours or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a flameproof exhaust ventilation system is required. Alternatively, a process enclosure system such as a fume cupboard should be employed.

Refer to AS 1940 - The storage and handling of flammable and combustible liquids and AS/NZS 60079.10.1:2009 Explosive atmospheres - Classification of areas - Explosive gas atmospheres, for further information concerning ventilation requirements.

Respiratory Protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements.

Reference should be made to Australian Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

Eye Protection

Safety glasses with side shields, chemical goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform to relevant regulations.

Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection

Wear gloves/gauntlets of impervious material such as nitrile (breakthrough time > 240 minutes). For incidental contact/splash protection neoprene or PVC gloves may be suitable. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection

Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form

Liquid

Appearance

Either green or blue, clear bright liquid.

Colour

Either green or blue, clear bright

Odour

Hydrocarbon

Decomposition Temperature

Not available

Melting Point

Not available

Freezing Point

Not available

Boiling Point

35 - 170°C

Solubility in Water

Negligible

pH

Not available

Vapour Pressure

38 - 49 kPa at 37.8°C

Vapour Density (Air=1)

Not available

Evaporation Rate

Not available

Viscosity

Not available

Partition Coefficient: n-octanol/water

2 - 7

Density0.700 g/cm³ (15°C) (typical)**Flash Point**

< -40°C

Flammability

Extremely flammable liquid

Auto-Ignition Temperature

> 250°C

Flammable Limits - Lower

1% (V)

Flammable Limits - Upper

6% (V)

Kinematic Viscosity0.5 - 0.75 mm²/s (40°C)

10. STABILITY AND REACTIVITY

Chemical Stability

Stable under normal conditions of storage and handling.

Reactivity and Stability

Reacts with incompatible materials.

Conditions to Avoid

Heat, open flames and other sources of ignition.

Incompatible materials

Strong oxidising agents.

Hazardous Decomposition Products

Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including a complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds.

Possibility of hazardous reactions

Not available

Hazardous Polymerization

Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information

The available toxicity data for material given below.

Acute Toxicity - Oral

LD50 (Rat) >2000 mg/kg

Acute Toxicity - Inhalation

LC50 (Rat): >5 mg/l/4h

Acute Toxicity - Dermal

LD50 (Rabbit): >2000 mg/kg

Ingestion

Toxic if swallowed. Ingestion of this product may cause irritation to the mouth, throat, oesophagus and stomach with symptoms of nausea, abdominal discomfort, vomiting and diarrhoea. May be fatal if swallowed and enters airways. Small amounts of liquid aspirated into the respiratory system during ingestion or from vomiting may cause severe pulmonary injury that may lead to death. May cause irritation to the mouth, throat, esophagus and stomach with symptoms of nausea, abdominal discomfort, vomiting and diarrhoea.

Inhalation

Toxic if inhaled. Inhalation may cause headaches, impairment of judgement and in extreme cases can lead to unconsciousness or death. May cause irritation to the mucous membrane and upper airways, especially where vapours or mists are generated. Symptoms include sneezing, coughing, wheezing, shortness of breath, headache, dizziness, drowsiness, nausea and vomiting.

Skin

Toxic in contact with skin. Product can be absorbed through skin with resultant toxic systemic effects. Causes skin irritation. Skin contact will cause redness, itching and swelling. Repeated exposure may cause skin dryness and cracking and may lead to dermatitis.

Eye

May be irritating to eyes. The symptoms may include redness, itching and tearing.

Respiratory sensitisation

Not expected to be a respiratory sensitizer.

Skin Sensitisation

Not expected to be a skin sensitizer.

Germ cell mutagenicity

May cause genetic defects. Classified as Known or presumed to induce heritable mutations.

Carcinogenicity

May cause cancer. Classified as a Known or presumed human carcinogen.

Reproductive Toxicity

May damage fertility or the unborn child. Classified as a Known or presumed human reproductive or developmental toxicant.

STOT-single exposure

May cause drowsiness or dizziness.

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration Hazard

May be fatal if swallowed and enters airways.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects.

Persistence and degradability

Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment. The volatile constituents will oxidize rapidly by photochemical reactions in air.

Mobility

Floats on water. Evaporates within a day from water or soil surfaces. Large volumes may penetrate soil and could contaminate groundwater. Contains volatile constituents.

Bioaccumulative Potential

Contains constituents with the potential to bioaccumulate.

Other Adverse Effects

Films formed on water may affect oxygen transfer and damage organisms.

Environmental Protection

Do not discharge this material into waterways, drains and sewers.

Acute Toxicity - Other Organisms

LL/EL/IL50:(aquatic organisms): 1-10 mg/l

13. DISPOSAL CONSIDERATIONS

Disposal considerations

Dispose of waste according to applicable local and national regulations. Labels should not be removed from containers until they have been cleaned. Advise flammable nature. Empty containers may contain flammable residues. Do not cut, puncture or weld on or near containers. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers. Wastes including emptied containers are controlled wastes and should be disposed of in accordance with all applicable local and national regulations. Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected.

14. TRANSPORT INFORMATION

Transport Information

Road and Rail Transport (ADG Code):

This material is a Class 3 - Flammable Liquid according to The Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

Class 3 - Flammable Liquids are incompatible in a placard load with any of the following:

- Class 1, Explosives
- Division 2.1, Flammable Gases, (Division 2.1 and Class 3 are incompatible in transport if both are in tanks or other receptacles with a capacity individually exceeding 500 L.)
- Division 2.3, Toxic Gases
- Division 4.2 Spontaneously Combustible Substances
- Division 5.1 Oxidising Agents and Division 5.2, Organic Peroxides
- Class 6 Toxic or Infectious Substances (where the flammable liquid is nitromethane)
- Class 7: Radioactive materials unless specifically exempted

Marine Transport (IMO/IMDG):

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

Class/Division: 3

UN No: 1203

Proper Shipping Name: GASOLINE(MARINE POLLUTANT)

Packing Group: II

EMS : F-E, S-E

Special Provisions: 243, 363

Air Transport (ICAO/IATA):

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

Class/Division: 3

UN No: 1203

Proper Shipping Name: Gasoline

Packing Group: II

Packaging Instructions (passenger & cargo): 353

Packaging Instructions (cargo only): 364

Hazard Label: Flammable Liquid

Special Provisions: A100

U.N. Number

1203

UN proper shipping name

GASOLINE

Transport hazard class(es)

3

Packing Group

II

Hazchem Code

3YE

IERG Number

14

IMDG Marine pollutant

Yes

Transport in Bulk

Not available

Special Precautions for User

Not available

Other Information

This product is classified as Oils under MARPOL Annex I. MARPOL Annex I rules apply for bulk shipments by sea.

15. REGULATORY INFORMATION**Regulatory information**

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of chemicals (GHS) including Work, Health and Safety regulations, Australia.

Not classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)

Poisons Schedule

Not Scheduled

16. OTHER INFORMATION**Date of preparation or last revision of SDS**

SDS Reviewed: July 2016

Supersedes: April 2015

References

- Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice.
- Standard for the Uniform Scheduling of Medicines and Poisons.
- Australian Code for the Transport of Dangerous Goods by Road & Rail.
- Model Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
- Workplace exposure standards for airborne contaminants, Safe work Australia.
- American Conference of Industrial Hygienists (ACGIH).
- Globally Harmonised System of classification and labelling of chemicals.

END OF SDS

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