Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Avgas

Product Use: Fuel
Company Identification
Puma Energy Australia
365 MacArthur Avenue
Hamilton, QLD 4007
Australia
1 300 723 706

Transportation Emergency Response
a. Transportation Emergency: 000
b. Chevron Emergency Information Center: 1 800 009 010
c. CHEMTREC: 02 9037 2994, +1 (800) 424-9300 or +1 (703) 527-3887
Health Emergency
a. Health Emergency: 000
b. Chevron Emergency Information Center: 1 800 009 010

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Flammable liquid: Category 2. Aspiration toxicant: Category 1. Carcinogen: Category 1B. Germ Cell Mutagen: Category 1B. Reproductive toxicant (developmental): Category 2. Skin irritation: Category 2. Target organ toxicant (central nervous system): Category 3. Acute aquatic toxicant: Category 2. Chronic aquatic toxicant: Category 2.

Signal Word: Danger
Physical Hazards: Highly flammable liquid and vapour (H225).
Health Hazards: May be fatal if swallowed and enters airways (H304). Causes skin irritation (H315). May cause drowsiness or dizziness (H336). Suspected of causing genetic defects (H341). May cause cancer (H350). Suspected of damaging the unborn child (H361D).
Environmental Hazards: Toxic to aquatic life with long lasting effects (H411).

PRECAUTIONARY STATEMENTS:
Prevention: Obtain special instructions before use (P201). Do not handle until all safety precautions have been read and understood (P202). Keep away from heat/sparks/open flames/hot surfaces. - No smoking (P210). Keep container tightly closed (P233). Keep cool (P235). Use explosion-proof electrical/ventilating/lighting/equipment (P241). Use only non-sparking tools (P242). Take precautionary measures against static discharge (P243). Avoid breathing dust/fume/gas/mist/vapours/spray (P261). Wash thoroughly after handling (P264). Use only outdoors or in a well-ventilated area (P271). Avoid

release to the environment (P273). Wear protective gloves/protective clothing/eye protection/face protection (P280).
Response: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician (P301+P310). IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower (P303+P361+P353). IF INHALED: Remove person to fresh air and keep comfortable for breathing (P304+P340). IF exposed or concerned: Get medical advice/attention (P308+P313). Call a POISON CENTER or doctor/physician if you feel unwell (P312). Specific treatment (see Notes to Physician on this label) (P321). Do NOT induce vomiting (P331). If skin irritation occurs: Get medical advice/attention (P332+P313). Wash contaminated clothing before reuse (P363). In case of fire: Use media specified in the SDS to extinguish (P370+P378). Collect spillage (P391).
Storage: Store in a well-ventilated place. Keep container tightly closed (P403+P233). Store locked up (P405).
Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations (P501).

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Naphtha, light alkylate	64741-66-8	70 - 100 %volume
Toluene	108-88-3	0 - 20 %volume
Naphtha, isomerization	64741-70-4	0 - 10 %volume
Benzene	71-43-2	0 - 1 %volume
Tetraethyl lead	78-00-2	0 - 0.1 %volume
Ethylene dibromide	106-93-4	0 - 0.1 %volume

Note that the remaining composition contains nonhazardous ingredients or hazardous ingredients below the relevant threshold up to 100%.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.
Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue or if any other symptoms develop.
Note to Physicians: Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin causes irritation. Skin contact may cause drying or defatting of the skin. Symptoms may include pain, itching, discoloration, swelling, and blistering. Contact with the skin is not expected to cause an allergic skin response.
Ingestion: Highly toxic; may be fatal if swallowed. Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death. May be irritating to mouth, throat, and stomach. Symptoms may include pain, nausea, vomiting, and diarrhea.
Inhalation: Excessive or prolonged breathing of this material may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of

coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:
Reproduction and Birth Defects: Contains material that may cause harm to the unborn child if inhaled above the recommended exposure limit based on animal data.
Cancer: Prolonged or repeated exposure to this material may cause cancer. Contains benzene, which has been classified as a carcinogen by the National Toxicology Program (NTP) and a Group 1 carcinogen (carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Genetic Toxicity: May cause heritable genetic damage based on animal data. See Section 11 for additional information. Risk depends on duration and level of exposure.

SECTION 5 FIRE FIGHTING MEASURES

HazChem Code: 3YE

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.
Unusual Fire Hazards: See Section 7 for proper handling and storage.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Precautionary Measures: This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Wash thoroughly after handling.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Nitrile Rubber, Polyurethane, Viton.
Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.
Occupational Exposure Limits:

Component	Country/ Agency	Form	TWA	STEL	Ceiling	Notation
Toluene	ACGIH	--	20 ppm	--	--	--
Toluene	Australia	--	191 mg/m3	574 mg/m3	--	--
Benzene	ACGIH	Vapor	.5 ppm	2.5 ppm	--	--
Benzene	ACGIH	--	.5 ppm	2.5 ppm	--	Skin
Benzene	Australia	--	3.2 mg/m3	--	--	--
Benzene	CVX	Vapor	1 ppm	5 ppm	--	--

Tetraethyl lead	ACGIH	--	.1 mg/m3	--	--	Skin as Pb
Tetraethyl lead	Australia	--	.1 mg/m3	--	--	Skin as Pb

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Blue or green dyed
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: 38 kPa - 49 kPa @ 38 °C (100.4 °F)
Vapor Density (Air = 1): 3 - 4 (Estimated)
Initial Boiling Point: 60°C (140°F) - 170°C (338°F)
Solubility: Low PPM range in water.
Freezing Point: -58°C (-72.4°F) (Max)
Melting Point: No data available
Specific Gravity: 0.65 - 0.75 @ 15°C (59°F)
Density: No data available
Viscosity: <1 SUS @ 37.8°C (100°F)
Evaporation Rate: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:
Flammability (solid, gas): No Data Available

Flashpoint: (Tagliabue Closed Cup ASTM D56) -46 °C (-51 °F) (Minimum)
Autoignition: 440 °C (824 °F)
Flammability (Explosive) Limits (% by volume in air): Lower: 1.2 Upper: 7

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: Not applicable
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects
Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for similar materials.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for similar materials.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.
Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

Aspiration Hazard: No data available

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains Light Alkylation Naphtha (CAS64741-66-8). A light-end fraction of this material was used to evaluated its reproductive and developmental effects on rats in a modified OECD Guideline No. 412 study. The highest inhalation exposure was 60% of the lower explosive limit for the light-end fraction. Exposure had no effect on food consumption, body weights, absolute and relative organ weights, histopathology, or reproductive indices. All groups had comparable delivery data and a fertility index of greater than 80 %. Pups in all groups showed comparable birth weights, weight gain, and viability index (postnatal day 4). The NOAEL was greater than 24.7 g/m3. The inhalation subchronic and neurotoxic potential of the light-end fraction was evaluated in a 13-week study following TSCA Health Effects Test Guidelines and EPA Neurotoxicity Testing Guidelines (1989). The highest exposure was 75% of the lower explosive limit for the light-end fraction. No test related mortality or effects on physical signs, body weight or food consumption were observed. Statistically significant increases in absolute and relative kidney weights in high dose males correlated with microscopically observed hyaline droplet formation. Increase liver weights in both sexes at the highest dose had no microscopic correlate and appeared reversible after the 4 week recovery period. Exposure at any dose did not produce neurotoxicity as measured by motor activity, functional observational battery, or neuropathology. The NOEL was 2220 ppm for subchronic toxicity and greater than 6646 ppm for neurotoxicity.
This product contains benzene.
GENETIC TOXICITY/CANCER: Repeated or prolonged breathing of benzene vapor has been associated with the development of chromosomal damage in experimental animals and various blood diseases in humans ranging from aplastic anemia to leukemia (a form of cancer). All of these diseases can be fatal. In some individuals, benzene exposure can sensitize cardiac tissue to epinephrine which may precipitate fatal ventricular fibrillation.
REPRODUCTIVE/DEVELOPMENTAL TOXICITY: No birth defects have been shown to occur in pregnant laboratory animals exposed to doses not toxic to the mother. However, some evidence of fetal toxicity such as delayed physical development has been seen at such levels. The available information on the effects of benzene on human pregnancies is inadequate but it has been established that benzene can cross the human placenta.
OCCUPATIONAL: The OSHA Benzene Standard (29 CFR 1910.1028) contains detailed requirements for training, exposure monitoring, respiratory protection and medical surveillance triggered by the exposure

level. Refer to the OSHA Standard before using this product.

This product contains an inorganic lead compound. Inorganic lead may be harmful if swallowed or inhaled. Chronic overexposure to lead can also cause damage to kidneys, and reproductive, blood-forming, and nervous systems. Inorganic lead has been shown to cross the placenta, and exposure has been reported to cause adverse reproductive effects in humans and animals. The carcinogenic potential of lead salts (primarily phosphates and acetates) administered via the oral route or by injection has been demonstrated in rats and mice.

This product contains toluene.
GENERAL TOXICITY: The primary effects of exposure to toluene in animals and humans are on the central nervous system. Solvent abusers, who typically inhale high concentrations (thousands of ppm) for brief periods of time, in addition to experiencing respiratory tract irritation, often suffer permanent central nervous system effects that include tremors, staggered gait, impaired speech, hearing and vision loss, and changes in brain tissue. Death in some solvent abusers has been attributed to cardiac arrhythmias, which appear to be have been triggered by epinephrine acting on solvent sensitized cardiac tissue. Although liver and kidney effects have been seen in some solvent abusers, results of animal testing with toluene do not support these as primary target organs.
HEARING: Humans who were occupationally exposed to concentrations of toluene as low as 100 ppm for long periods of time have experienced hearing deficits. Hearing loss, as demonstrated using behavioral and electrophysiological testing as well as by observation of structural damage to cochlear hair cells, occurred in experimental animals exposed to toluene. It also appears that toluene exposure and noise may interact to produce hearing deficits.
COLOR VISION: In a single study of workers exposed to toluene at levels under 50 ppm, small decreases in the ability to discriminate colors in the blue-yellow range have been reported for female workers. This effect, which should be investigated further, is very subtle and would not likely have been noticed by the people tested.
REPRODUCTIVE/DEVELOPMENTAL TOXICITY: Toluene may also cause mental and/or growth retardation in the children of female solvent abusers who directly inhale toluene (usually at thousands of ppm) when they are pregnant. Toluene caused growth retardation in rats and rabbits when administered at doses that were toxic to the mothers. In rats, concentrations of up to 5000 ppm did not cause birth defects. No effects were observed in the offspring at doses that did not intoxicate the pregnant animals. The exposure level at which no effects were seen (No Observed Effect Level, NOEL) is 750 ppm in the rat and 500 ppm in the rabbit.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is expected to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

96 hour(s) LC50: 8.3 mg/l (Cyprinodon variegatus)

MOBILITY
No data available.

PERSISTENCE AND DEGRADABILITY
This material is not expected to be readily biodegradable. Following spillage, the more volatile components of gasoline will be rapidly lost, with concurrent dissolution of these and other constituents into the water. Factors such as local environmental conditions (temperature, wind, mixing or wave action, soil type, etc), photo-oxidation, biodegradation and adsorption onto suspended sediments, can contribute to the weathering of spilled gasoline.

POTENTIAL TO BIOACCUMULATE
Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by international, country, or local laws and regulations.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

HazChem Code: 3YE

ADG/ADOT Shipping Description:UN1203, GASOLINE, 3, II; OR OPTIONAL DISCLOSURE: UN1203, AVIATION GASOLINE, 3, II

IMO/IMDG Shipping Description:UN1203, GASOLINE, 3, II, FLASH POINT SEE SECTION 5 OR 9, MARINE POLLUTANT (GASOLINE LEADED)

ICAO/IATA Shipping Description:UN1203, GASOLINE, 3, II

SECTION 15 REGULATORY INFORMATION

REGULATORY LISTS SEARCHED:
01-1=IARC Group 1
01-2A=IARC Group 2A
01-2B=IARC Group 2B

The following components of this material are found on the regulatory lists indicated.

Benzene	01-1
Ethylene dibromide	01-2A

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AIIC (Australia), DSL (Canada), EINECS (European Union), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

SECTION 16 OTHER INFORMATION

REVISION STATEMENT: SECTION 15 - Chemical Inventories information was modified.

Review Date: September 02, 2020

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number

ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
CVX - Chevron	NTP - National Toxicology Program (USA)
DOT - Department of Transportation (USA)	
IARC - International Agency for Research on Cancer	

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The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.