










Material Safety Data Sheet

WHMIS (Pictograms)	WHMIS (Classification)	Protective Clothing	TDG (pictograms)
 	B-2, D-2B	   	

Section 1. Chemical Product and Company Identification

Product Name	AVIATION GASOLINE 100LL	Code	060-100LL, W118
Synonym	AVGAS 100LL	Validated on	5/30/2005.
Manufacturer	PETRO-CANADA P.O. Box 2844 Calgary, Alberta T2P 3E3	In case of Emergency	Petro-Canada: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).
Material Uses	This product is used as fuel for internal combustion aircraft engines.		

Section 2. Composition and Information on Ingredients

			Exposure Limits (ACGIH)		
Name	CAS #	% (V/V)	TLV-TWA(8 h)	STEL	CEILING
Complex mixture of aliphatic and aromatic hydrocarbons (C4-C12).	68527-27-5	85-95	Not established	Not established	Not established
Toluene	108-88-3	5-15	50 ppm	Not established	Not established
Contains 0-0.56g/L of lead [from Tetraethyl Lead].					
Manufacturer Recommendation	Not applicable				
Other Exposure Limits	Consult local, state, provincial or territory authorities for acceptable exposure limits.				

Section 3. Hazards Identification.

Potential Health Effects	Flammable liquid. Exercise caution when handling this material. Contact with this product may cause skin and eye irritation. Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death. Ingestion of this product may cause gastro-intestinal irritation. Aspiration of this product may result in severe irritation or burns to the respiratory tract. For more information refer to Section 11 of this MSDS.
---------------------------------	---

Section 4. First Aid Measures

Eye Contact	Avoid direct contact. Quickly and gently blot or brush away chemical. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes or until the chemical is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately.
Skin Contact	Avoid direct contact. Wear chemical resistant protective clothing if necessary. Quickly and gently, blot or brush away excess chemical. Wash gently and thoroughly with warm water and non-abrasive soap for 20 minutes or until chemical is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g., watch bands, belts, etc.). Obtain medical attention immediately. Completely decontaminate clothing, shoes and leather goods before reuse or discard.
Inhalation	Take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment). If breathing has stopped, trained personnel should begin artificial respiration (AR) or, if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately. Immediately transport victim to an emergency care facility.
Ingestion	NEVER give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. Have victim drink 240 to 300 mL (8 to 10 oz) of water to dilute material in stomach. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Repeat administration of water. If breathing has stopped, trained personnel should begin artificial respiration (AR) or, if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately. Quickly transport victim to an emergency care facility.
Note to Physician	Not available

Section 5. Fire-fighting Measures

Flammability	Flammable liquid (NFPA).	Flammable Limits	LOWER: 1.4%, UPPER: 7.6%
Flash Points	Closed Cup: -50°C (-58°F), Tag, ASTM D56.	Auto-Ignition Temperature	257°C (494.6°F)
Fire Hazards in Presence of Various Substances	Easily ignites under almost all normal temperature conditions. Flammable in presence of open flames, sparks, shocks, heat, oxidizing materials. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. May accumulate in confined spaces.	Explosion Hazards in Presence of Various Substances	Do not cut, weld, heat, drill or pressurize empty container. Containers may explode in heat of fire. Vapours may form explosive mixtures with air. Runoff to sewer may create fire or explosion hazard.
Products of Combustion	Carbon oxides (CO, CO ₂), reactive hydrocarbons, aldehydes, smoke and irritating vapours as products of incomplete combustion.		
Fire Fighting Media and Instructions	NAERG2004, GUIDE 128, Flammable liquids (Non-polar/Water-immiscible). CAUTION: This product has a very low flash point: Use of water spray when fighting fire may be inefficient. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. SMALL FIRES: Dry chemical, CO ₂ , water spray or regular foam. LARGE FIRES: Water spray, fog or regular foam. Do not use straight streams. Move containers from fire area if you can do it without risk. Fires Involving Tanks or Car/Trailer Loads: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting devices or any discolouration of tank. ALWAYS stay away from the ends of tanks. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible withdraw from area and let fire burn. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.		

Section 6. Accidental Release Measures

Material Release or Spill	IN THE EVENT OF A LARGE SPILL CONSIDER THE FOLLOWING CONTROL MEASURES: Notify appropriate authorities immediately. Evacuate non-essential personnel. Ensure clean-up personnel wear appropriate personal protective equipment. Extinguish all ignition sources. Ventilate area. Avoid contact with spilled material. Avoid breathing vapours or mists of material. Stop leak if safe to do so. Dike spilled material. Use appropriate inert absorbent material to absorb spilled product. Collect used absorbent for later disposal. Ground and bond all equipment used to clean up the spilled material, as it may be a static accumulator. Do not allow spilled materials to come into contact with incompatible materials (see Section 10). Avoid contaminating sewers, streams, rivers and other water courses with spilled material. Do not allow spilled material to enter sewer systems as vapours may accumulate and may cause an explosion/fire hazard. Consult current National Emergency Response Guide Book (NAERG) for appropriate spill measures if necessary.
----------------------------------	--

Section 7. Handling and Storage

Handling	FLAMMABLE MATERIAL. Handle with care. Avoid skin contact. Avoid eye contact. Avoid inhalation of product vapours or mists. Do not ingest this product. Avoid contact with any sources of ignition, flames, heat, and sparks. Avoid contact with any incompatible or reactive materials. Avoid confined spaces and areas with poor ventilation. Ensure all equipment is grounded/bonded. Ensure container is securely closed when not in use. Wear proper personal protective equipment (See Section 8). Exercise caution when washing/drying clothing contaminated with flammable materials. Personnel who handle this material should practice good personal hygiene during and after handling to help prevent accidental ingestion of this product. Empty containers may contain product residue. Do not pressurize, cut, heat, or weld empty containers. Do not reuse containers without commercial cleaning and/or reconditioning.
Storage	Store as flammable material. Store away from heat and sources of ignition. Store away from incompatible and reactive materials (See section 5 and 10). Store in a dry, cool and well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	For normal application, special ventilation is not necessary. If user's operations generate vapours or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Make-up air should always be supplied to balance air removed by exhaust ventilation. Ensure that eyewash station and safety shower are close to work-station.
Personal Protection - The selection of personal protective equipment varies, depending upon conditions of use.	
Eyes	As a minimum, safety glasses with side shields should be worn when handling this material.
Body	If this material may come in contact with the body during handling and use, we recommend wearing appropriate protective clothing to prevent contact with the skin. (Contact your PPE provider for more information.)
Respiratory	A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hands If this material may come in contact with the hands during handling and use, we recommend wearing gloves of the following material(s): polyvinyl alcohol (PVA) and fluoro-elastomer. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns.

Feet Wear appropriate footwear to prevent product from coming in contact with feet and skin.

Section 9. Physical and Chemical Properties

Physical State and Appearance	Clear liquid.	Viscosity	Not available
Colour	Bright Blue.	Pour Point	Not applicable.
Odour	Gasoline.	Softening Point	Not applicable.
Odour Threshold	Not available	Dropping Point	Not applicable.
Boiling Point	30 to 170°C (86 to 338°F)	Penetration	Not applicable.
Density	0.69 kg/L @ 15°C (59°F).	Oil / Water Dist. Coefficient	Not measurable. The product is more soluble in oil.
Vapour Density	Heavier than air.	Ionicity (in water)	Insoluble in water.
Vapour Pressure	38 kPa @ 20°C (285 mmHg @ 68°F).	Dispersion Properties	Not available
Volatility	Volatile.	Solubility	Hydrocarbon components virtually insoluble in water. Soluble in alcohol, ether, chloroform, and benzene. Dissolves fats, oils and natural resins.

Section 10. Stability and Reactivity

Corrosivity	Non corrosive.		
Stability	The product is stable under normal handling and storage conditions.	Hazardous Polymerization	Will not occur under normal working conditions.
Incompatible Substances / Conditions to Avoid	Can react with strong oxidizing agents, acids, tetranitromethane, uranium hexafluoride and sulfur dichloride.	Decomposition Products	May release COx, aldehydes, smoke and irritating vapours when heated to decomposition.

Section 11. Toxicological Information

Routes of Entry	Skin contact, eye contact, inhalation and ingestion.
Acute Lethality	Acute toxicity information is not available for the product as a whole, therefore, data for some of the ingredients is provided below: <u>Toluene (108-88-3):</u> Acute Oral toxicity (LD50): 636 mg/kg (rat) Acute Dermal toxicity (LD50): 12225 mg/kg (rabbit) Acute Inhalation toxicity (LC50): 8800 ppm/4h (rat)
Chronic or Other Toxic Effects	
Dermal Route:	This product contains a component (at >= 1%) that can cause skin irritation. Therefore, this product is considered to be a skin irritant. Prolonged or repeated contact may defat and dry skin, and cause dermatitis.
Inhalation Route:	Inhalation of this product may cause respiratory tract irritation. Inhalation of this product may cause Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.
Oral Route:	Ingestion of this product may cause gastro-intestinal irritation. Aspiration of this product may result in severe irritation or burns to the respiratory tract.
Eye Irritation/Inflammation:	Short-term exposure is expected to cause only slight irritation, if any. This product contains a component (at >= 1%) that can cause eye irritation. Therefore, this product is considered to be an eye irritant.
Immunotoxicity:	Not available
Skin Sensitization:	Contact with this product is not expected to cause skin sensitization, based upon the available data and the known hazards of the components.
Respiratory Tract Sensitization:	Contact with this product is not expected to cause respiratory tract sensitization, based upon the available data and the known hazards of the components.

Mutagenic:	This product is not known to contain any components at $\geq 0.1\%$ that have been shown to cause mutagenicity. Therefore, based upon the available data and the known hazards of the components, this product is not expected to be a mutagen.
Reproductive Toxicity:	This product is not known to contain any components at $\geq 0.1\%$ that have been shown to cause reproductive toxicity. Therefore, based upon the available data and the known hazards of the components, this product is not expected to be a reproductive toxin.
Teratogenicity/Embryotoxicity:	There is a wealth of information about the teratogenic hazards of Toluene in the literature; however, based upon professional judgement regarding the body of evidence, WHMIS classification as a teratogen is not warranted.
Carcinogenicity (ACGIH):	This product is not known to contain any chemicals at reportable quantities that are listed as A1, A2 or A3 carcinogens by ACGIH.
Carcinogenicity (IARC):	This product is not known to contain any chemicals at reportable quantities that are listed as group 1, 2A or 2B carcinogens by IARC.
Carcinogenicity (NTP):	This product is not known to contain any chemicals at reportable quantities that are listed as carcinogens by NTP.
Carcinogenicity (IRIS):	This product is not known to contain any chemicals at reportable quantities that are listed as carcinogens by IRIS.
Carcinogenicity (OSHA):	This product is not known to contain any chemicals at reportable quantities that are listed as carcinogens by OSHA.
Other Considerations	No additional remark.

Section 12. Ecological Information

Environmental Fate	Not available	Persistence/Bioaccumulation Potential	Not available
BOD5 and COD	Not available	Products of Biodegradation	Not available
Additional Remarks No additional remark.			

Section 13. Disposal Considerations

Waste Disposal	Spent/ used/ waste product may meet the requirements of a hazardous waste. Consult your local or regional authorities. Ensure that waste management processes are in compliance with government requirements and local disposal regulations.
-----------------------	--

Section 14. Transport Information

TDG Classification	GASOLINE, 3, UN1203, PGII (CL-TDG)	Special Provisions for Transport	See Transportation of Dangerous Goods Regulations.
---------------------------	------------------------------------	---	--

Section 15. Regulatory Information

Other Regulations	This product is acceptable for use under the provisions of WHMIS-CPR. All components of this formulation are listed on the CEPA-DSL (Domestic Substances List).																								
	All components of this formulation are listed on the US EPA-TSCA Inventory.																								
	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.																								
	Please contact Product Safety for more information.																								
DSD/DPD (Europe)	Not evaluated.		HCS (U.S.A.)	CLASS: Flammable liquid having a flash point lower than 37.8°C (100°F). CLASS: Irritating substance. CLASS: Target organ effects.																					
ADR (Europe) (Pictograms)	NOT EVALUATED FOR EUROPEAN TRANSPORT NON ÉVALUÉ POUR LE TRANSPORT EUROPÉEN.		DOT (U.S.A) (Pictograms)	Not evaluated for transport Non évalué pour le transport																					
HMIS (U.S.A.)	<table><tr><td>Health Hazard</td><td>(2*)</td></tr><tr><td>Fire Hazard</td><td>(4)</td></tr><tr><td>Reactivity</td><td>(0)</td></tr><tr><td>Personal Protection</td><td>(H)</td></tr></table>		Health Hazard	(2*)	Fire Hazard	(4)	Reactivity	(0)	Personal Protection	(H)	NFPA (U.S.A.)	<table><tr><td rowspan="2">Health</td><td>4</td><td rowspan="2">Fire Hazard</td></tr><tr><td>2</td><td>0</td></tr><tr><td></td><td></td><td>Reactivity</td></tr><tr><td></td><td></td><td>Specific hazard</td></tr></table>	Health	4	Fire Hazard	2	0			Reactivity			Specific hazard	Rating	0 Insignificant 1 Slight 2 Moderate 3 High 4 Extreme
Health Hazard	(2*)																								
Fire Hazard	(4)																								
Reactivity	(0)																								
Personal Protection	(H)																								
Health	4	Fire Hazard																							
	2		0																						
		Reactivity																							
		Specific hazard																							

Section 16. Other Information**References**

Available upon request.

* Marque de commerce de Petro-Canada - Trademark

Glossary

ACGIH - American Conference of Governmental Industrial Hygienists

ADR - Agreement on Dangerous goods by Road (Europe)

ASTM - American Society for Testing and Materials

BOD5 - Biological Oxygen Demand in 5 days

CAN/CGA B149.2 Propane Installation Code

CAS - Chemical Abstract Services

CEPA - Canadian Environmental Protection Act

CERCLA - Comprehensive Environmental Response, Compensation and Liability Act

CFR - Code of Federal Regulations

CHIP - Chemicals Hazard Information and Packaging Approved Supply List

CNS - Central Nervous System

COD5 - Chemical Oxygen Demand in 5 days

CPR - Controlled Products Regulations

DOT - Department of Transport

DSCL - Dangerous Substances Classification and Labeling (Europe)

DSD/DPD - Dangerous Substances or Dangerous Preparations Directives (Europe)

DSL - Domestic Substance List

EEC/EU - European Economic Community/European Union

EINECS - European Inventory of Existing Commercial Chemical Substances

EPA - Environmental Protection Agency

EPCRA - Emergency Planning and Community Right to Know Act

FDA - Food and Drug Administration

FIFRA - Federal Insecticide, Fungicide and Rodenticide Act

HCS - Hazard Communication Standard

HMIS - Hazardous Material Information System

IARC - International Agency for Research on Cancer

IRIS - Integrated Risk Information System

LD50/LC50 - Lethal Dose/Concentration kill 50%

LDLo/LCLo - Lowest Published Lethal Dose/Concentration

NAERG'96 - North American Emergency Response Guide Book (1996)

NFPA - National Fire Prevention Association

NIOSH - National Institute for Occupational Safety & Health

NPRI - National Pollutant Release Inventory

NSNR - New Substances Notification Regulations (Canada)

NTP - National Toxicology Program

OSHA - Occupational Safety & Health Administration

PEL - Permissible Exposure Limit

RCRA - Resource Conservation and Recovery Act

RTECS - Registry of Toxic Effects of Chemical Substances

SARA - Superfund Amendments and Reorganization Act

SD - Single Dose

STEL - Short Term Exposure Limit (15 minutes)

TDG - Transportation Dangerous Goods (Canada)

TDLo/TCLo - Lowest Published Toxic Dose/Concentration

TLm - Median Tolerance Limit

TLV-TWA - Threshold Limit Value-Time Weighted Average

TSCA - Toxic Substances Control Act

USEPA - United States Environmental Protection Agency

USP - United States Pharmacopoeia

WHMIS - Workplace Hazardous Material Information System

For Copy of MSDSInternet: www.petro-canada.ca/msds

Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228

For Product Safety Information: (905) 804-4752

Prepared by Product Safety - JDW on 5/30/2005.

Data entry by Product Safety - JDW.

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.