

**Shell Canada Limited**
Material Safety Data Sheet

Effective Date: 2006-04-25

Supersedes: 2002-08-14

DISCONTINUEDClass B2 Flammable
LiquidClass D2B Other Toxic
Effects - Skin IrritantClass D2A Other Toxic
Effects - Carcinogen**1. PRODUCT AND COMPANY IDENTIFICATION**

PRODUCT: **SHELL JET B WITHANTI-ICING ADDITIVE**
SYNONYMS: WIDE BOILING RANGE AVIATION TURBINE FUEL
PLUS ANTI ICING ADDITIVE
PRODUCT USE: Fuel
MSDS Number: 141-020

MANUFACTURER
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T2P 2H5

TELEPHONE NUMBERS
Shell Emergency Number 1-800-661-7378
CANUTEC 24 HOUR EMERGENCY NUMBER 613-996-6666
For general information: 1-800-661-1600
For MSDS information: 403-691-3982
(From 7:30 to 4:30 Mountain Time) 403-691-2220

This MSDS was prepared by the Toxicology and Product Stewardship Section of Shell Canada Limited.

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS Number	% Range	WHMIS Controlled
Naphtha (Petroleum), Full-range Reformed	68919-37-9	> 95	Yes
Benzene	71-43-2	0.5 - 1.5	Yes
Ethanol, 2-(2-methoxyethoxy)-	111-77-3	0.1 - 1	Yes

See Section 8 for Occupational Exposure Guidelines.

3. HAZARDS IDENTIFICATION

Physical Description: Liquid Bright Clear Typical Gasoline Odour

Routes of Exposure: Exposure may occur via inhalation, ingestion, skin absorption and skin or eye contact.

Hazards:

Flammable Liquid.
Irritating to skin.
Contains Benzene.
May cause cancer.
Vapours are moderately irritating to the eyes.
Vapours are moderately irritating to the respiratory passages. The liquid when accidentally aspirated into the lungs can cause a severe inflammation of the lung.
Handling: Eliminate all ignition sources.
Wear suitable gloves and eye protection.
Bond and ground transfer containers and equipment to avoid static accumulation.
Avoid prolonged exposure to vapours.
Empty containers are hazardous, may contain flammable / explosive dusts, liquid residue or vapours. Keep away from sparks and open flames.

For further information on health effects, see Section 11.

4. FIRST AID

Eyes: Flush eyes with water for at least 15 minutes while holding eyelids open. If irritation occurs and persists, obtain medical attention.

Skin: Wash contaminated skin with mild soap and water for 15 minutes. If irritation occurs and persists, obtain medical attention.

Ingestion: DO NOT INDUCE VOMITING! OBTAIN MEDICAL ATTENTION IMMEDIATELY. Guard against aspiration into lungs by having the individual turn on to their left side. If vomiting occurs spontaneously keep head below hips to prevent aspiration of liquid into the lungs.

Inhalation: Remove victim from further exposure and restore breathing, if required. Obtain medical attention.

Notes to Physician: The main hazard following accidental ingestion is aspiration of the liquid into the lungs producing chemical pneumonitis. If more than 2.0 mL/kg has been ingested, vomiting should be induced with supervision. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before vomiting, gastric lavage with a cuffed endotracheal tube should be considered.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Dry Chemical
Carbon Dioxide
Foam
Water Fog

Firefighting Instructions: Extremely flammable. Vapour forms a flammable/explosive mixture with air between upper and lower flammable limits. Vapours may travel along ground and flashback along vapour trail may occur. Flashback may occur along vapour trail. Do not use water except as a fog. Use water to cool fire exposed containers. Product will float and can be reignited on surface of water. Do not enter confined fire space without adequate protective clothing and an approved positive pressure self-contained breathing apparatus.

Hazardous Combustion Products: A complex mixture of airborne solid, liquid, particulates and gases will evolve when this material undergoes pyrolysis or combustion. Carbon dioxide, carbon monoxide and unidentified organic compounds may be formed upon combustion.

6. ACCIDENTAL RELEASE MEASURES

Issue warning "Flammable". Eliminate all ignition sources. Handling equipment must be grounded. Isolate hazard area and restrict access. Try to work upwind of spill. Avoid direct contact with material. Saturated clothing should be immediately removed to avoid flammability hazard. Wear appropriate breathing apparatus (if applicable) and protective clothing. Stop leak only if safe to do so. Dike and contain land spills; contain water spills by booming. Use water fog to knock down vapours; contain runoff. For large spills remove by mechanical means and place in containers. Absorb residue or small spills with absorbent material and remove to non-leaking containers for disposal. Recommended materials: Clay or Sand . Flush area with water to remove trace residue. Dispose of recovered material as noted under Disposal Considerations. Notify appropriate environmental agency(ies).

7. HANDLING AND STORAGE

- Handling:** Extremely flammable. Avoid excessive heat, sparks, open flames and all other sources of ignition. Fixed equipment as well as transfer containers and equipment should be grounded to prevent accumulation of static charge. Vapours are heavier than air and will settle and collect in low areas and pits, displacing breathing air. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapours are gone. Vapours may accumulate and travel to distant ignition sources and flashback. Do not cut, drill, grind, weld or perform similar operations on or near containers. Empty containers are hazardous, may contain flammable/explosive dusts, residues or vapours. Do not pressurize drum containers to empty them. Never siphon by mouth. Wash with soap and water prior to eating, drinking, smoking, applying cosmetics or using toilet facilities. Launder contaminated clothing prior to reuse. Use good personal hygiene.
- Storage:** Use explosion-proof ventilation to prevent vapour accumulation. Keep container tightly closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

THE FOLLOWING INFORMATION, WHILE APPROPRIATE FOR THIS PRODUCT, IS GENERAL IN NATURE. THE SELECTION OF PERSONAL PROTECTIVE EQUIPMENT WILL VARY DEPENDING ON THE CONDITIONS OF USE.

OCCUPATIONAL EXPOSURE LIMITS (Current ACGIH TLV/TWA unless otherwise noted):

North American exposure limits have not been established for the product. Consult local authorities for acceptable provincial values.

Recommend SHELL guideline of 125 mg/m³ for vapours (8 hour shift).

Gasoline: 300 ppm (STEL: 500 ppm)

Benzene (skin) : 0.5 ppm (STEL: 2.5 ppm)

Skin Notation: Absorption through skin, eyes and mucous membranes may contribute significantly to the total exposure.

- Mechanical Ventilation:** Use explosion-proof ventilation as required to control vapour concentrations. Concentrations in air should be maintained below lower explosive limit at all times or below the recommended threshold limit value if unprotected personnel are involved. Make up air should always be supplied to balance air exhausted (either generally or locally). For personnel entry into confined spaces (i.e. bulk storage tanks) a proper confined space entry procedure must be followed including ventilation and testing of tank atmosphere.

PERSONAL PROTECTIVE EQUIPMENT:

- Eye Protection:** Chemical safety goggles and/or full face shield to protect eyes and face, if product is handled such that it could be splashed into eyes. Provide an eyewash station in the area.
- Skin Protection:** Impervious gloves (viton, nitrile) should be worn at all times when handling this material. In confined spaces or where the risk of skin exposure is much higher, impervious clothing should be worn. Safety showers should be available for emergency use.
- Respiratory Protection:** Avoid breathing vapour or mists. If exposure has the potential to exceed occupational exposure limits, use an appropriate NIOSH-approved respirator. For high airborne concentrations, use a NIOSH-approved supplied-air respirator, either self-contained or airline breathing apparatus, operated in positive pressure mode.

9. PHYSICAL DATA

Physical State:	Liquid
Appearance:	Bright Clear
Odour:	Typical Gasoline Odour
Odour Threshold:	Not available
Freezing/Pour Point:	< -51 °C
Boiling Point:	60 - 260 °C
Density:	750 - 801 kg/m3 @ 15 °C
Vapour Density (Air = 1):	Not available
Vapour Pressure (absolute):	> 42 mm Hg @ 38 °C
pH:	Not applicable
Flash Point:	Method Tag Closed Cup < 1 °C
Lower Explosion Limit:	1 % (vol.)
Upper Explosion Limit:	7 % (vol.)
Autoignition Temperature:	Not available
Viscosity:	Not available
Evaporation Rate (n-BuAc = 1):	Not available
Partition Coefficient (K_{OW}):	Not available
Water Solubility:	Insoluble
Other Solvents:	Hydrocarbon Solvents

10. STABILITY AND REACTIVITY

Chemically Stable:	Yes
Hazardous Polymerization:	No
Sensitive to Mechanical Impact:	No
Sensitive to Static Discharge:	Yes
Hazardous Decomposition Products:	Thermal decomposition products are highly dependent on combustion conditions.
Incompatible Materials:	Avoid contact with strong oxidizing agents and acids.
Conditions of Reactivity:	Avoid excessive heat, open flames and all ignition sources.

11. TOXICOLOGICAL INFORMATION

Ingredient (or Product if not specified)	Toxicological Data
Naphtha (Petroleum), Full-range Reformed	LD50 Oral Rat > 28 mL/kg

Benzene	LD50 Dermal Rabbit > 8260 mg/kg LC50 Inhalation Rat = 13050 ppm for 4 hours LD50 Oral Rat = 690 mg/kg
Ethanol, 2-(2-methoxyethoxy)-	LD50 Dermal Rabbit > 2000 mg/kg LD50 Oral Rat 4140 - 5180 mg/kg

Routes of Exposure:	Exposure may occur via inhalation, ingestion, skin absorption and skin or eye contact.
Irritancy:	This product is expected to be irritating to skin but is not predicted to be a skin sensitizer.
Chronic Effects:	Prolonged and repeated contact with skin can cause defatting and drying of the skin resulting in skin irritation and dermatitis. Prolonged exposure to high vapour concentration can cause headache, dizziness, nausea, blurred vision and central nervous system depression. Prolonged and repeated exposure may cause serious injury to blood forming organs, resulting in anemia and similar conditions.
Pre-existing Conditions:	Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product.
Carcinogenicity and Mutagenicity:	This product contains benzene. Carcinogenic hazard. Epidemiological studies indicate that long term inhalation of benzene vapour can cause leukaemia in man. Benzene has also produced chromosomal aberrations in peripheral blood lymphocytes.

12. ECOLOGICAL INFORMATION

Environmental Effects:	Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams, or public waterways. Block off drains and ditches. Provincial regulations require and federal regulations may require that environmental and/or other agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities. May be harmful to aquatic life. May cause physical fouling of aquatic organisms.
Biodegradability:	Not readily biodegradable. Potential for bioaccumulation.

13. DISPOSAL CONSIDERATIONS

Waste management priorities (depending on volumes and concentration of waste) are: 1. recycle (reprocess), 2. energy recovery (cement kilns, thermal power generation), 3. incineration, 4. disposal at a licenced waste disposal facility. Do not attempt to combust waste on-site. Incinerate at a licenced waste disposal site with approval of environmental authority.

14. TRANSPORTATION INFORMATION

Canadian Road and Rail Shipping Classification:

UN Number	UN1863
Proper Shipping Name	FUEL, AVIATION, TURBINE ENGINE
Hazard Class	Class 3 Flammable Liquids
Packing Group	PG II
Shipping Description	FUEL, AVIATION, TURBINE ENGINE Class 3 UN1863 PG II

15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations (CPR)* and the MSDS contains all the information required by the CPR.

WHMIS Class: Class B2 Flammable Liquid
Class D2B Other Toxic Effects - Skin Irritant
Class D2A Other Toxic Effects - Carcinogen

DSL/NDSL Status: This product, or all components, are listed on the Domestic Substances List, as required under the Canadian Environmental Protection Act. This product and/or all components are listed on the U.S. EPA TSCA Inventory.

Other Regulatory Status: No Canadian federal standards.

16. ADDITIONAL INFORMATION**LABEL STATEMENTS**

Hazard Statement : Flammable Liquid.
Irritating to skin.
Contains Benzene.
May cause cancer.

Handling Statement: Eliminate all ignition sources.
Wear suitable gloves and eye protection.
Bond and ground transfer containers and equipment to avoid static accumulation.
Avoid prolonged exposure to vapours.
Empty containers are hazardous, may contain flammable / explosive dusts, liquid residue or vapours. Keep away from sparks and open flames.

First Aid Statement : Wash contaminated skin with soap and water.
Flush eyes with water.
If overcome by vapours remove to fresh air.
Do not induce vomiting.
Obtain medical attention.

Revisions: This MSDS has been reviewed and updated.
Changes have been made to:
Section 3
Section 5
Section 8