

Annex E  
Jet-A1 MSDS

# NORTH ATLANTIC REFINING LTD.

## MATERIAL SAFETY DATA SHEET

PREPARED: July 26, 2008

### SECTION 1. PRODUCT INFORMATION

Product Identifier: **Jet A1**

Application and Use: TURBINE ENGINE FUEL, HEATING FUEL  
Product Description: A complex mixture of aliphatic and aromatic hydrocarbons.  
Predominant carbon numbers are C9 to C16.

**REGULATORY CLASSIFICATION**  
W.H.M.I.S.  
CLASS B3: COMBUSTIBLE LIQUID  
CLASS D2B: OTHER TOXIC EFFECTS

#### MANUFACTURER/SUPPLIER:

NORTH ATLANTIC REFINING LTD.      CONTACT BETWEEN  
COME BY CHANCE, NFLD. A0B 1N0      07:30 - 1600 HRS N.S.T.  
TEL: (709) 463-8811 (24 hrs.)      Plant Industrial Hygienist  
FAX: (709) 463-8076  
AFTER HOURS:      Plant Security

**USE IN CASE OF A DANGEROUS GOODS EMERGENCY:**  
CANUTEC: (613) 996 6666

### SECTION 2. REGULATED COMPONENT

THE FOLLOWING ARE DEFINED IN ACCORDANCE WITH SUB-PARAGRAPH 13 (a)(i) TO (iv) OR PARAGRAPH 14(a) OF THE HAZARDOUS PRODUCTS ACT:

Name	CAS #	%
CONTROLLED INGREDIENTS		
HYDRODESULPHURIZED KEROSENE	64742-81-0	100%

A complex mixture of aliphatic and aromatic hydrocarbons.  
LD50: >20g/kg      LC50: Not available TWA: Not available STEL: Not available

### SECTION 3. HAZARDS IDENTIFICATION.

#### Potential Acute Effects:

**Inhalation:** Jet A1 has a low vapour pressure and inhalation is unlikely. If heated or misted, the product may cause dizziness, headaches, light-headedness and nausea.

**Eye Contact:** May irritate the eyes, permanent damage is not suspected.

**Skin Contact:** Mildly irritating.

**Ingestion:** The product is mildly toxic when ingested. Vomiting, stomach irritation and central nervous system depression often occur. If the product is aspirated, (enters the lungs) serious damage may occur.

#### Potential Chronic Health Effects:

The product can cause irritation (dermatitis) when exposed to the skin repeatedly and over prolonged periods. Lifetime skin tests on experimental animals have produced skin cancers. The relationship between the animal skin tests and human has not been established. Sensitisation is not expected.

### SECTION 4. TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

Physical state: liquid  
Odour and appearance: Petroleum odour, slightly yellow, clear, may be dyed.  
Odour threshold: Not available  
Specific gravity: 0.81 (Water =1)

Vapour pressure @ 38°C: Not available  
Vapour density: 4-7 (Air=1)  
Evaporation rate: Not available  
Boiling point: 170-280°C  
Freezing/melting point: -60°C  
pH: Not applicable  
Coefficient of water/oil distribution: Not available  
Solubility in water: nil

### SECTION 5. FIRST AID MEASURES

#### EYE CONTACT:

Check for and remove any contact lenses. Copious warm water flush: 15 minutes, Obtain medical advice.

#### SKIN CONTACT:

If this product soils clothing, remove the contaminated clothes as quickly as possible, protecting you own hands and body according to Section 8. Wash contaminated skin with non-abrasive soap and flush area with water. If irritation persists, seek medical attention.

#### INGESTION:

Ingestion is unlikely, DO NOT induce vomiting. Materials aspirated into the lungs during vomiting may cause serious complications. Keep at rest. Physician assessment is mandatory.

#### INHALATION:

Inhalation is unlikely unless product is heated. Allow the victim to rest in a well-ventilated area. If victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

### SECTION 6. FIRE AND EXPLOSION DATA

Fire Fighting Instructions: Flammable liquid, insoluble in water. Use water spray to cool fire-exposed surfaces and to protect personnel. Shut off fuel to fire if it is possible to do so without hazard. If a leak or spill has not ignited, use water spray to disperse the vapours. Remotely disconnect or shut off the power sources. Either, allow the fire to burn out under controlled conditions or extinguish with foam, dry chemicals or other approved extinguishing medium. Try to cover spilled liquid with foam. Respiratory, eye and body protection are required for fire fighting personnel. Response to small fire with extinguishers will usually be done upwind and only if considered safe. Personal protective equipment is usually not required when using portable extinguishers. Response to larger (catastrophic) fires should only be attempted by trained fire fighters.

Flammability: Flammable when heated.  
Auto-Ignition Temperature: 250°C  
Flash Point: 60°C  
Flammable Limits: 0.7% lower, 5% upper  
Products of Combustion: CO<sub>x</sub>, SO<sub>x</sub>, NO<sub>x</sub>, and Smoke  
Conditions of Flammability: Heat and ignition source, flame or electric spark.  
Explosion Hazards: Not believed to be sensitive to mechanical agitation. Material may accumulate a static charge.

### SECTION 7. ACCIDENTAL RELEASE MEASURES

**Small Spill:** Absorb with an inert material and put the spilled material in an appropriate waste disposal. Wear protective clothing specified in personal protection.

**Large Spill:** Stop leak. Absorb spilled material with an inert material and dispose in an approved container. Seek advice from the appropriate authorities.

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### SECTION 8. REACTIVITY DATA

Stability:	Product is stable.
Conditions for instability:	Not available.
Conditions to avoid:	Avoid excessive heat. Formation of mists.
Incompatibility:	Highly reactive with oxidising agents such as peroxides, perchlorates.
Decomposition products:	CO <sub>x</sub> , SO <sub>x</sub> , NO <sub>x</sub> , Smoke on combustion.

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### SECTION 9. PREVENTATIVE MEASURES

**Personal Protective Equipment:** Chemical safety goggles and/or full face shield to protect eyes and face. Viton or nitrile gloves and impervious clothing should be worn at all times while handling the product. NIOSH recommends that a respirator equipped with an organic vapour cartridge may be used in atmospheres up to 1000ppm in concentration. In higher concentrations SCBA should be used.

**Engineering Controls:** Highly recommended for all indoor situations to control fugitive emissions. Electrical and mechanical equipment should be explosion proof. Concentrations in air should be maintained below the lower explosion limit at all times or below the recommended threshold limit value if unprotected personnel are involved. For personnel entry into a confined space (i.e. bulk storage tanks), a proper confined space entry must be followed, including ventilation and testing of tank atmosphere. Make up air should always be supplied to balance air exhausted.

**Land Spill:** Eliminate any sources of ignition. Keep the public away. Prevent additional discharge of material if possible to do so without hazard. Consult an expert on disposal of recovered material. Ensure disposal is performed in compliance with government regulations. Notify the appropriate authorities. For spills over 70L in Canada contact the Canadian Coast Guard, 1-800-563-2444. Take additional action to prevent and remedy the adverse effects of the spill.

**Water Spill:** Eliminate all sources of ignition. Prevent additional discharge of material. Consult an expert on disposal of recovered material. Ensure disposal is performed in compliance with government regulations. Notify the appropriate authorities. For all spills in Canada contact the Canadian Coast Guard, 1-800-563-2444. Take additional action to prevent and remedy the adverse effects of the spill.

**Storage and handling:** Combustible, store in a cool, dry, well ventilated area away from heat sources. Launder contaminated clothing and use good hygiene practices. Material may accumulate a static charge. Use proper relaxation and grounding procedures

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The information contained herein is based on the data available to us and is believed to be correct. However, North Atlantic Refining Limited makes no warranty, expressed or implied regarding the accuracy of these data or results to be obtained from the use thereof. North Atlantic Refining Limited assumes no responsibility for injury from the use of the product described herein.

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