



MATERIAL SAFETY DATA SHEET

Product Name: Arctic Diesel Fuel (3090)

SECTION 1 – PRODUCT IDENTIFICATION AND USE

Product name	Arctic Diesel Fuel	PIN #, UN #	1202
Chemical name	None	TDG, DOT class	Class 3
Common names and Product use	Diesel fuel No. 1, Fuel oil #1-D Fuel	Packing group	III
WHMIS classification	Combustible liquid Class B Division 3 Toxic material Class D Division 2 Subdivision B	Shipping name	Diesel Fuel
Hazard codes	NFPA Health 2 Flammability 2 Reactivity 0	HMIS Health 2 Flammability 2 Reactivity 0	
<i>NFPA & HMIS Ratings: 0=Insignificant/No Hazard. 1=Slight Hazard. 2=Moderate Hazard. 3=High/Serious Hazard. 4=Extreme/Severe</i>			
Supplier	Irving Oil Limited, Refining Division Box 1260, Saint John New Brunswick Canada E2L 4H6	Phone Emergency Refinery	(506) 202-2000 1-800-424-9300 (506) 202-3000

SECTION 2 – HAZARDOUS INGREDIENTS

Ingredients	CAS#	Wt (%)	ACGIH-TLVs (2004)	OSHA PELs (general industry) (2004)	NIOSH RELS (2004)	LD ₅₀ (rat, oral)	LC ₅₀ (rat, 4 hours)
Diesel fuel no. 1	68334-30-5	100	200 mg/m ³ TWA (total hydrocarbon vapour)	NAv for this product name or	100 mg/m ³ TWA	>5 g/kg	~5g/m ³
<i>May contain:</i> Benzene	71-43-2	Trace	0.5 ppm TWA 2.5 ppm STEL	1 ppm TWA 5 ppm STEL	0.1 ppm TWA 1.0 ppm STEL	930 mg/kg	13,200 ppm
<i>May also contain:</i> Sulphur	7704-34-9	Trace	NAv	NAv	NAv	>8.4 mg/kg	NAv
<i>Which, under certain circumstances, may result in the evolution of:</i>							
Hydrogen sulphide (H ₂ S)	7783-04-6	NAp	10 ppm TWA 15 ppm STEL	20 ppm CEILING	10 ppm CEILING	NAp	444 ppm
<i>Arctic diesel is a complex mixture of hydrocarbons. Its exact composition depends on the source of the crude oil from which it was produced and the refining methods used. Arctic diesel contains hundreds of individual organic chemicals. This section identifies only some of the well-known chemical constituents.</i>							

SECTION 3 – PHYSICAL DATA

Form	Liquid	Vapour	10.5 mm Hq @ 38°C
Colour	Colourless to pale yellow	Evaporation rate	NAv
Odour	Kerosene-like	Boiling point	157 to 261°C (315 to 501°F)
Odour	Not available	Freezing point	- 47°C (- 53°F)
Specific gravity	0.81 @ 15°C	pH	NAp
Vapour density	4.5	Coefficient of water/oil	3.3 to >6(Log P _{oct})

SECTION 4 – FIRE AND EXPLOSION HAZARDS

Flammability	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Conditions	Easily ignited by heat, sparks or flames.
Flash point	40°C (104°F) (cc)	Auto ignition	210°C (410°F)
Lower flammable limit	0.7%	Upper flammable limit	5%
Explosion data: Sensitivity		Mechanical impact	Not expected to be sensitive
		Static discharge	Yes
Means of extinction	In general, do not extinguish fire unless flow can be stopped. Use carbon dioxide, dry chemical, or foam. Cool containers with flooding quantities of water until well after the fire is out.		
Special precautions	Vapour is heavier than air. It will spread along the ground and collect in low or confined areas (sewers, basements, tanks). Vapour may travel to source of ignition and flash back. Containers may explode when heated		
Hazardous combustion products	Carbon monoxide. Nitrogen oxides. Aromatic hydrocarbons.		

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SECTION 5 – REACTIVITY INFORMATION

Stability	Stable
Conditions to avoid	Sources of ignition. Static discharges. High temperatures.
Incompatible substances	Oxidizers such as peroxides, nitric acid, and perchlorates.
Hazardous decomposition products	Carbon monoxide. Nitrogen oxides. Aromatic hydrocarbons. H ₂ S and sulphur dioxide (SO ₂) may be produced from minor amounts of sulphur in the product.

SECTION 6 – HEALTH HAZARD INFORMATION

Route of Entry	<input type="checkbox"/> Eye <input checked="" type="checkbox"/> Skin absorption Diesel fuel itself, as well as some components <input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Ingestion	Hazardous Contact	<input type="checkbox"/> Eye <input checked="" type="checkbox"/> Skin contact
Acute exposure	Headache and other symptoms of central nervous system (CNS) depression, such as nausea and dizziness, as well as burning sensation in chest following inhalation. Aspiration into the lungs can cause severe pneumonitis (serious lung irritation), chest pain, and/or pulmonary edema (swelling). Ingestion may produce nausea, vomiting, and cramping. Note: H₂S may offgas from the product in confined spaces such as the headspace in tanks, even though the concentration of sulphur in the product is minimal. H ₂ S is very toxic. At concentrations as low as 1 to 5 ppm, nausea and severe eye irritation may occur. Sense of smell may be impaired at about 20 ppm, with headache and respiratory tract lung irritation. At 250 to 500 ppm, potentially fatal pulmonary edema (fluid in the lungs) may occur. Dizziness, sudden (often fatal) collapse, unconsciousness, and death occur at higher concentrations. Pulmonary edema may be delayed as long as 48 hours.		
Chronic exposure	Dermatitis. Possibly blood and nervous system disorders. Fatigue, and severe nervous and respiratory system symptoms may follow survival of H ₂ S poisoning.		
Carcinogenicity	Benzene is known to be carcinogenic. Exposure to fuel oils during refining is considered "probably carcinogenic to humans". IARC and NTP classify untreated and mildly treated mineral oils as known human carcinogens. ACGIH, EPA, NIOSH, and OSHA have not classified them.	Mutagenicity	Not known to be mutagenic
		Sensitization	No
		Irritancy	Skin, respiratory
		Teratogenicity	NAv
		Reproductive toxicity	NAv
Toxicologically synergistic	Other CNS depressants can be expected to produce additive or synergistic effects. May increase photosensitizing ability of certain chemicals, such as dinitrochlorobenzene (DNCB).		

SECTION 7 – FIRST AID

Inhalation	Move victim to fresh air. Give artificial respiration if breathing has stopped and if a qualified AR administrator is available. Apply CPR if both pulse and breathing have stopped. Obtain medical attention immediately.
Ingestion	Never give anything by mouth if the person is unconscious, rapidly losing consciousness, or convulsing. If the person is conscious, have them drink 8 to 10 ounces of water or milk to dilute the material in the stomach. Do not induce vomiting. If vomiting occurs spontaneously, have the person lean forward to avoid aspiration. Obtain medical attention immediately.
Eye	If irritation occurs, flush eye with lukewarm, gently flowing fresh water for at least 10 minutes.
Skin	Quickly and gently blot away excess chemical. Gently remove contaminated clothing and shoes under running water. Wash gently and thoroughly with water and non-abrasive soap. Obtain medical assistance.

SECTION 8 – PRECAUTIONARY MEASURES

Do not attempt rescue of an H₂S knockdown victim without the use of proper respiratory protective equipment.	
Personal Protective Equipment	Nitrile, Viton™, polyethylene preferred.
Gloves	Chemical safety goggles or face shield, as a good general safety practice.
Eye	NIOSH-approved. SCBA or air line respirator with escape cylinder for confined spaces or work with sulphur-containing product. A qualified occupational health and safety professional should advise on respirator selection. If an air-purifying respirator is appropriate, use organic vapour.
Respiratory	Coveralls to prevent skin contact with product. If clothing or footwear becomes contaminated with product, completely decontaminate it before re-use, or discard it.
Clothing & footwear	

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Engineering controls	Enclose processes. Use local exhaust ventilation to remove vapour at its site of generation. Handle laboratory samples in a fume hood. Use mechanical ventilation in confined spaces.
Handling procedures & equipment	Avoid heating open containers of product so as to minimize vapour production and accumulation. Use non-sparking equipment, explosion-proof ventilation, and intrinsically safe electrical equipment. Ground handling equipment. Have clean emergency eyewash and shower readily available in the work area.
Leak & spill procedure	Keep unauthorized persons away. Eliminate all sources of ignition. Ventilate area. Stop leak if it can be done safely. Prevent entry into sewers, waterways, or confined spaces. Absorb or cover with dry earth, sand or other non-combustible material and use clean, non-sparking tools to transfer to container.
Waste disposal	Consult local authorities for advice.
Storage	Cool, dry, well-ventilated area. No ignition sources. Containers should be vented and have flame
Shipping	Stable during transport. May be transported hot.

SECTION 9 – PREPARATION DATE OF MSDS

Prepared by	Irving Oil Limited, Refining Division	Phone	(506) 202-3000
Revision date	July 26, 2005	To re-order MSDS,	(506) 202-2000

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