



# MATERIAL SAFETY DATA SHEET

Product Name: Ultra Low Sulphur Diesel (3094)

## SECTION 1 – PRODUCT IDENTIFICATION AND USE

|                                  |  |                       |   |
|----------------------------------|--|-----------------------|---|
| <b>Product name</b>              | Ultra Low Sulphur Diesel   | <b>PIN #, UN #</b>    | 1202  |
| <b>Chemical name</b>             | None   | <b>TDG, DOT class</b> | Class 3   |
| <b>Common names and synonyms</b> | API No. 2 fuel oil. Home heating oil No. 2. Number 2 burner oil. | <b>Packing group</b>  | III   |
| <b>Product use</b>               | Fuel   | <b>Shipping Name</b>  | Diesel Fuel; Fuel Oil; Gas Oil; or Heating Oil, Light |

|                             |   |
|-----------------------------|---|
| <b>WHMIS classification</b> | Combustible liquid Class B Division 3<br>Toxic Class D Division 2 Subdivision B                   |
| <b>Hazard codes</b>         | <b>NFPA</b> Health 1 Flammability 2 Reactivity 0 <b>HMIS</b> Health 1 Flammability 2 Reactivity 0 |

*NFPA & HMIS Ratings: 0=Insignificant/No Hazard. 1=Slight Hazard. 2=Moderate Hazard. 3=High/Serious Hazard. 4=Extreme/Severe Hazard.*

|                 |   |                             |                |
|-----------------|---|-----------------------------|----------------|
| <b>Supplier</b> | Irving Oil Limited, Refining Division<br>Box 1260, Saint John<br>New Brunswick Canada E2L 4H6 | <b>Phone</b>                | (506) 202-2000 |
|                 |   | <b>Emergency (Chemtrec)</b> | 1-800-424-9300 |
|                 |   | <b>Refinery</b>             | (506) 202-3000 |

## SECTION 2 – HAZARDOUS INGREDIENTS

| Ingredients   | CAS#       | Wt (%)   | ACGIH-TLVs (2004)                   | OSHA PELs (2004) (general industry) | NIOSH RELs (2004)           | LD <sub>50</sub> (rat, oral) | LC <sub>50</sub> (rat, 4 hours) |
|---|------------|----------|-------------------------------------|-------------------------------------|-----------------------------|------------------------------|---------------------------------|
| Fuel oil  | 68476-30-2 | 100      | 100 mg/m <sup>3</sup> TWA (vapour & | NAv for this product name or CAS#   |                             | >5 g/kg                      | ~5g/m <sup>3</sup>              |
| <i>May contain:</i><br>Benzene  | 71-43-2    | Trace    | 0.5 ppm TWA<br>2.5 ppm STEL         | 1 ppm TWA<br>5 ppm STEL             | 0.1 ppm TWA<br>1.0 ppm STEL | 930 mg/kg                    | 3,200 ppm                       |
| Polycyclic aromatic hydrocarbons (PAHs) <i>which may include: Naphthalene</i> | Various    | Up to 10 | Various                             | Various                             | Various                     | Various                      | Various                         |
| <i>May also contain:</i><br>Sulphur   | 7704-34-9  | <0.0015  | NAv                                 | NAv                                 | NAv                         | >8.4 mg/kg                   | NAv                             |

*Fuel oil 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. Fuel oil contains hundreds of individual organic chemicals. This section identifies only some of the well-known chemical constituents.*

## SECTION 3 – PHYSICAL DATA

|                         |                                |  |                                    |
|-------------------------|--------------------------------|--|------------------------------------|
| <b>Form</b>             | Slightly viscous, oily, liquid | <b>Vapour pressure</b>                       | 2.12 to 26.4 mm Hg @ 21°C          |
| <b>Colour</b>           | Yellowish-brown                | <b>Evaporation rate</b>                      | NAv                                |
| <b>Odour</b>            | Kerosene-like                  | <b>Boiling point</b>                         | 160 to 358°C (321 to 676°F)        |
| <b>Odour threshold</b>  | Not available                  | <b>Freezing point</b>                        | NAv                                |
| <b>Specific gravity</b> | 0.830 to 0.879 @ 20°C          | <b>pH</b>                                    | NAp                                |
| <b>Vapour density</b>   | NAv                            | <b>Coefficient of water/oil distribution</b> | 3.3 to 7.06 (Log K <sub>ow</sub> ) |

## SECTION 4 – FIRE AND EXPLOSION HAZARDS

|  |  |                                  |   |
|--|--|----------------------------------|---|
| <b>Flammability</b>                    | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  | <b>Conditions</b>                | Easily ignited by heat, sparks or flames. |
| <b>Flash point</b>                     | 38 to 54°C (100 to 130°F) (cc)   | <b>Auto ignition temperature</b> | 257°C (494°F)                             |
| <b>Lower flammable limit</b>           | 0.6 to 1.3%  | <b>Upper flammable limit</b>     | 6 to 7.5%                                 |
| <b>Explosion data: Sensitivity to:</b> | <b>Mechanical impact</b>   | Not expected to be sensitive     | <b>Static discharge</b> Vapour: yes       |
| <b>Means of extinction</b>             | 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.              |                                  |   |
| <b>Special precautions</b>             | Vapour is heavier than air. It will spread along the ground & collect in low or confined areas (sewers, basements). Also travels to source of ignition and flash back. Containers may explode when heated. |                                  |   |
| <b>Hazardous combustion products</b>   | Carbon monoxide. Nitrogen oxides. PAHs and other aromatic hydrocarbons. H <sub>2</sub> S and sulphur dioxide (SO <sub>2</sub> ) may be produced from minor amounts of sulphur in the product.              |                                  |   |

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## SECTION 5 – REACTIVITY INFORMATION

|   |  |
|---|--|
| <b>Stability</b>                        | Stable   |
| <b>Conditions to avoid</b>              | Sources of ignition. Static discharges. High temperatures.   |
| <b>Incompatible substances</b>          | Oxidizers such as peroxides, nitric acid, and perchlorates.  |
| <b>Hazardous decomposition products</b> | Carbon monoxide, nitrogen oxides, and numerous aromatic hydrocarbons. H <sub>2</sub> S and SO <sub>2</sub> may be produced by the minor amounts of sulfur in the product . |

## SECTION 6 – HEALTH HAZARD INFORMATION

|   |   |                              |  |
|---|---|------------------------------|--|
| <b>Route of Entry</b>                       | <input type="checkbox"/> Eye<br><input checked="" type="checkbox"/> <b>Skin absorption</b> Fuel itself, as well as benzene & naphthalene<br><input checked="" type="checkbox"/> <b>Inhalation</b><br><input checked="" type="checkbox"/> <b>Ingestion</b>   | <b>Hazardous Contact</b>     | <input checked="" type="checkbox"/> Eye<br><input checked="" type="checkbox"/> <b>Skin contact</b> |
| <b>Acute exposure</b>                       | Coughing, headache, and giddiness following inhalation. Aspiration into the lungs can cause severe pneumonitis (serious lung irritation), with coughing, gagging, shortness of breath, chest pain, and/or pulmonary edema (swelling). Ingestion may produce nausea, vomiting, and cramping. Kidney effects and systemic edema have been reported after severe exposure.<br>Note: H <sub>2</sub> S may offgas from the product in confined spaces, even though the concentration of sulphur in the product is minor. H <sub>2</sub> 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. Note: Pulmonary edema may be delayed as long as 48 hours after exposure. |                              |  |
| <b>Chronic exposure</b>                     | Kidney, gastrointestinal, blood, and skin disorders. Headache, nausea, vomiting. Fatigue, and severe nervous and respiratory system symptoms may follow survival of H <sub>2</sub> S poisoning.   |                              |  |
| <b>Carcinogenicity</b>                      | Benzene and certain PAHs are 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.   | <b>Mutagenicity</b>          | Not known to be mutagenic  |
|   |   | <b>Sensitization</b>         | No   |
|   |   | <b>Irritancy</b>             | Skin and respiratory tract   |
|   |   | <b>Teratogenicity</b>        | Not available  |
|   |   | <b>Reproductive toxicity</b> | Not available  |
| <b>Toxicologically synergistic products</b> | Other CNS depressants can be expected to produce additive or synergistic effects.   |                              |  |

## SECTION 7 – FIRST AID

|                   |   |
|-------------------|---|
| <b>Inhalation</b> | 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.   |
| <b>Ingestion</b>  | 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. <b>Do not</b> induce vomiting. If vomiting occurs spontaneously, have the person lean forward to avoid aspiration. Obtain medical attention immediately. |
| <b>Eye</b>        | If irritation occurs, flush eye with lukewarm, gently flowing fresh water for at least 10 minutes.  |
| <b>Skin</b>       | 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 H<sub>2</sub>S knockdown victim without the use of proper respiratory protective equipment.**

|                                      |                                |  |
|--------------------------------------|--------------------------------|--|
| <b>Personal protective equipment</b> | <b>Gloves</b>                  | Nitrile, Viton™, Polyvinylchloride, Tychem®BR/LV, or Tychem®TK preferred.  |
|                                      | <b>Eye</b>                     | Chemical safety goggle or face shield, as a good general safety practice.  |
|                                      | <b>Respiratory</b>             | NIOSH-approved SCBA or air line respirator with escape cylinder.   |
|                                      | <b>Clothing &amp; footwear</b> | Coveralls to prevent skin contact with product. If clothing or footwear becomes contaminated with product, completely decontaminate it before re-use, or discard it. |

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Low Sulphur Diesel  
(3094)

|  |  |
|--|--|
| <b>Engineering controls</b>                | 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.  |
| <b>Handling procedures &amp; equipment</b> | 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.        |
| <b>Leak &amp; spill Procedure</b>          | 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. |
| <b>Waste disposal</b>                      | Consult local authorities for advice.  |
| <b>Storage</b>                             | May be stored at ambient temperatures. Containers should be vented and equipped with a flame arrester.   |
| <b>Shipping</b>                            | Stable during transport. May be transported hot.   |

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## SECTION 9 – PREPARATION DATE OF MSDS

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|                      |                                       |                                |                |
|----------------------|---------------------------------------|--------------------------------|----------------|
| <b>Prepared by</b>   | Irving Oil Limited, Refining Division | <b>Phone</b>                   | (506) 202-3000 |
| <b>Revision date</b> | January 3, 2006                       | <b>To re-order MSDS, phone</b> | (506) 202-2000 |

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