SAFETY DATA SHEET

1. Identification

Product identifier Bunker #5, #5 Fuel oil, Bunker fuel, residual fuel oil #5

Other means of identification

SDS number 9618

Recommended use Residual fuel oil for burner installations equipped with limited preheating facilities that require a fuel oil of lower viscosity than Type 6.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Énergie Valero Inc.
1801 McGill College, 13e étage
Montreal, Quebec H3A 2N4

24-Hour Emergency

Canutec (613) 996-6666

General Information

(888) 871-4404

New Brunswick Poison Information Center
(506) 857-5555

Newfoundland Poison Control Center
(709) 722-1110

Nova Scotia / PEI Poison Control Center
1-800-565-8161

Ontario Regional Poison Information Center
1-800-267-1373 (Ottawa)
1-800-268-9017 (Toronto)

Quebec Poison Control Center
1-800-463-5060

2. Hazard(s) identification

Physical hazards Flammable liquids Category 3

Health hazards

Acute toxicity, oral Category 4
Acute toxicity, inhalation Category 3
Skin corrosion/irritation Category 2
Carcinogenicity Category 1B
Reproductive toxicity Category 2
Specific target organ toxicity, single exposure Category 3 narcotic effects
Specific target organ toxicity, repeated exposure Category 2 (Blood, Liver, Thymus)
Aspiration hazard Category 1

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 1
Hazardous to the aquatic environment, long-term hazard Category 1

OSHA defined hazards Not classified.

Label elements

Signal word Danger
Hazard statement
Flammable liquid and vapor. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. May cause cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs (Blood, Liver, Thymus) through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.

Precautionary statement
Prevention
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response
If swallowed: Immediately call a poison center/doctor. Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. If exposed or concerned: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish. Collect spillage.

Storage
Store in a well-ventilated place. Keep cool. Store locked up.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)
Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

Supplemental information
Repeated exposure may cause skin dryness or cracking.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Oil No. 6</td>
<td>68553-00-4</td>
<td>70 - 85</td>
</tr>
<tr>
<td>Clarified oils (Petroleum), catalytic cracked</td>
<td>64741-62-4</td>
<td>0 - 55</td>
</tr>
<tr>
<td>Distillates (petroleum), intermediate catalytic cracked</td>
<td>64741-60-2</td>
<td>0 - 55</td>
</tr>
<tr>
<td>Distillates (petroleum), petroleum residues vacuum</td>
<td>68955-27-1</td>
<td>0 - 55</td>
</tr>
<tr>
<td>Residues (petroleum), topping plant, low-sulfur</td>
<td>68607-30-7</td>
<td>0 - 55</td>
</tr>
<tr>
<td>Residues (petroleum), vacuum</td>
<td>64741-56-6</td>
<td>0 - 55</td>
</tr>
<tr>
<td>Fuel Oil No. 2</td>
<td>68476-30-2</td>
<td>15 - 30</td>
</tr>
<tr>
<td>Nonane</td>
<td>111-84-2</td>
<td>0 - 0.7</td>
</tr>
<tr>
<td>Octane</td>
<td>111-65-9</td>
<td>0 - 0.5</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>0 - 0.3</td>
</tr>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>0 - 0.3</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>0 - 0.3</td>
</tr>
</tbody>
</table>

Composition comments
Small amount of hydrogen sulfide, a highly toxic gas, may be present, especially in the headspace of containers. All concentrations are in percent by volume unless otherwise indicated.

4. First-aid measures

Inhalation
Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact
Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Ingestion
Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Environmental precautions

Methods and materials for emergency procedures

General precautions

Methods and materials for containment and cleaning up

Environmental precautions

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed. This product may be a static accumulator which can form an ignitable vapour-air mixture in a storage tank.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

Flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulfide (H2S) and flammability. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. This material is classified as a water contaminant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.
7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Hydrogen sulfide, a very toxic gas, may be present with this material. Keep face clear of tank and/or tank car openings. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist or vapor. Do not taste or swallow. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS). Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulfide (H2S) and flammability.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)</td>
<td>PEL</td>
<td>5 mg/m3</td>
<td>Mist.</td>
</tr>
<tr>
<td>Distillates (petroleum), intermediate catalytic cracked (CAS 64741-60-2)</td>
<td>PEL</td>
<td>400 mg/m3</td>
<td></td>
</tr>
<tr>
<td>Ethylbenzene (CAS 100-41-4)</td>
<td>PEL</td>
<td>100 ppm</td>
<td></td>
</tr>
<tr>
<td>Fuel Oil No. 6 (CAS 68553-00-4)</td>
<td>PEL</td>
<td>5 mg/m3</td>
<td>Mist.</td>
</tr>
<tr>
<td>Octane (CAS 111-65-9)</td>
<td>PEL</td>
<td>2350 mg/m3</td>
<td></td>
</tr>
<tr>
<td>Xylene (CAS 1330-20-7)</td>
<td>PEL</td>
<td>435 mg/m3</td>
<td></td>
</tr>
</tbody>
</table>

US. OSHA Table Z-2 (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene (CAS 108-88-3)</td>
<td>Ceiling</td>
<td>300 ppm</td>
</tr>
<tr>
<td>Toluene (CAS 108-88-3)</td>
<td>TWA</td>
<td>200 ppm</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)</td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>Inhalable fraction.</td>
</tr>
</tbody>
</table>
### US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylbenzene (CAS 100-41-4)</td>
<td>TWA</td>
<td>20 ppm</td>
<td></td>
</tr>
<tr>
<td>Fuel Oil No. 2 (CAS 68476-30-2)</td>
<td>TWA</td>
<td>100 mg/m³</td>
<td>Inhalable fraction and vapor.</td>
</tr>
<tr>
<td>Fuel Oil No. 6 (CAS 68553-00-4)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>Nonane (CAS 111-84-2)</td>
<td>TWA</td>
<td>200 ppm</td>
<td></td>
</tr>
<tr>
<td>Octane (CAS 111-65-9)</td>
<td>TWA</td>
<td>300 ppm</td>
<td></td>
</tr>
<tr>
<td>Toluene (CAS 108-88-3)</td>
<td>TWA</td>
<td>20 ppm</td>
<td></td>
</tr>
<tr>
<td>Xylene (CAS 1330-20-7)</td>
<td>TWA</td>
<td>150 ppm</td>
<td></td>
</tr>
</tbody>
</table>

### US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)</td>
<td>STEL</td>
<td>10 mg/m³</td>
<td>Mist.</td>
</tr>
<tr>
<td>Distillates (petroleum), intermediate catalytic cracked (CAS 64741-60-2)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Mist.</td>
</tr>
<tr>
<td>Ethylbenzene (CAS 100-41-4)</td>
<td>STEL</td>
<td>545 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Toluene</td>
<td>TWA</td>
<td>125 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>435 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Nonane (CAS 111-84-2)</td>
<td>TWA</td>
<td>100 ppm</td>
<td></td>
</tr>
<tr>
<td>Octane (CAS 111-65-9)</td>
<td>Ceiling</td>
<td>1800 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>350 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>75 ppm</td>
<td></td>
</tr>
<tr>
<td>Toluene (CAS 108-88-3)</td>
<td>STEL</td>
<td>560 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>150 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>375 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>100 ppm</td>
<td></td>
</tr>
<tr>
<td>Xylene (CAS 1330-20-7)</td>
<td>STEL</td>
<td>655 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>150 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>435 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>100 ppm</td>
<td></td>
</tr>
</tbody>
</table>

### Biological limit values

#### ACGIH Biological Exposure Indices

<table>
<thead>
<tr>
<th>Components</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylbenzene (CAS 100-41-4)</td>
<td>0.15 g/g</td>
<td>Sum of mandelic acid and phenylglyoxylic acid</td>
<td>Creatinine in urine</td>
<td>*</td>
</tr>
<tr>
<td>Toluene (CAS 108-88-3)</td>
<td>0.3 mg/g</td>
<td>o-Cresol, with hydrolysis</td>
<td>Creatinine in urine</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>0.03 mg/l</td>
<td>Toluene</td>
<td>Urine</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>0.02 mg/l</td>
<td>Toluene</td>
<td>Blood</td>
<td>*</td>
</tr>
</tbody>
</table>
ACGIH Biological Exposure Indices

<table>
<thead>
<tr>
<th>Components</th>
<th>Value</th>
<th>Determinant</th>
<th>Specimen</th>
<th>Sampling Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylene (CAS 1330-20-7)</td>
<td>1.5 g/g</td>
<td>Methylhippuric acids</td>
<td>Creatinine in urine</td>
<td>*</td>
</tr>
</tbody>
</table>

* - For sampling details, please see the source document.

Exposure guidelines

**US - California OELs: Skin designation**
Toluene (CAS 108-88-3) Can be absorbed through the skin.

**US - Minnesota Haz Subs: Skin designation applies**
Toluene (CAS 108-88-3) Skin designation applies.

**US ACGIH Threshold Limit Values: Skin designation**
Fuel Oil No. 2 (CAS 68476-30-2) Can be absorbed through the skin.

Appropriate engineering controls
Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash fountain and emergency showers are recommended.

Individual protection measures, such as personal protective equipment

- **Eye/face protection**
  Wear chemical splash goggles.

- **Skin protection**
  - **Hand protection**
    Wear appropriate chemical resistant gloves.
  - **Other**
    Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

- **Respiratory protection**
  Chemical respirator with organic vapor cartridge and full facepiece.

- **Thermal hazards**
  Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
Observe any medical surveillance requirements. When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

**Appearance**
- **Physical state**
  Liquid.
- **Form**
  Oily, viscous liquid.
- **Color**
  Black or dark brown.
- **Odor**
  Characteristic hydrocarbon.
- **Odor threshold**
  Not available.
- **pH**
  Not available.
- **Melting point/freezing point**
  Not available.
- **Initial boiling point and boiling range**
  293 - 1112 °F (145 - 600 °C)
- **Flash point**
  > 129.2 °F (> 54.0 °C) Pensky-Martens Closed Cup
- **Evaporation rate**
  Not available.
- **Flammability (solid, gas)**
  Flammable liquid and vapor.

**Upper/lower flammability or explosive limits**
- **Flammability limit - lower (%)**
  Not available.
- **Flammability limit - upper (%)**
  Not available.
- **Vapor pressure**
  Not available.
- **Vapor density**
  Not available.
- **Relative density**
  0.915 - 0.995 [H2O = 1]
Solubility (water) Not available.
Partition coefficient (n-octanol/water) Not available.
Auto-ignition temperature Not available.
Decomposition temperature Not available.
Viscosity 15 - 100 cSt at 122°F (50°C)

Other information
Explosive properties Not explosive.
Oxidizing properties Not oxidizing.

10. Stability and reactivity
Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability Material is stable under normal conditions.
Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.
Conditions to avoid Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials Strong oxidizing agents.

11. Toxicological information
Information on likely routes of exposure
Inhalation May cause damage to organs through prolonged or repeated exposure by inhalation.
Skin contact Causes skin irritation. Repeated exposure may cause skin dryness or cracking.
Eye contact Direct contact with eyes may cause temporary irritation.
Ingestion Harmful if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics Aspiration may cause pulmonary edema and pneumonitis. Dizziness. Direct contact with eyes may cause temporary irritation. Skin irritation. May cause redness and pain. Jaundice. Prolonged exposure may cause chronic effects.

Information on toxicological effects
Acute toxicity May be fatal if swallowed and enters airways.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td>Inhalation</td>
<td>Aerosol</td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>&gt; 320 mg/m3, 4 Hours</td>
</tr>
<tr>
<td></td>
<td>Distillates (petroleum), intermediate catalytic cracked (CAS 64741-60-2)</td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td>Inhalation</td>
<td>Aerosol</td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>&gt; 3.19 mg/l, 4 Hours</td>
</tr>
<tr>
<td>Ethylbenzene (CAS 100-41-4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td>Dermal</td>
<td>Rabbit</td>
</tr>
<tr>
<td>LD50</td>
<td>15400 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inhalation</td>
<td>LC50</td>
</tr>
<tr>
<td></td>
<td>Oral</td>
<td>LD50</td>
</tr>
</tbody>
</table>
**Components** | **Species** | **Test Results**
---|---|---
Toluene (CAS 108-88-3)  
**Acute**  
**Dermal**  
LD50 | Rabbit | 12200 mg/kg  
**Inhalation**  
**Vapor**  
LC50 | Rat | 28.1 mg/l, 4 Hours
Xylene (CAS 1330-20-7)  
**Acute**  
**Oral**  
LD50 | Rat | 3523 mg/kg

**Skin corrosion/irritation**
Causes skin irritation. Repeated exposure may cause skin dryness or cracking.

**Serious eye damage/eye irritation**
Direct contact with eyes may cause temporary irritation.

**Respiratory or skin sensitization**
- **Respiratory sensitization**: Not a respiratory sensitizer.
- **Skin sensitization**: Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.

**Germ cell mutagenicity**
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity**
May cause cancer.

**IARC Monographs. Overall Evaluation of Carcinogenicity**
- Ethylbenzene (CAS 100-41-4): 2B Possibly carcinogenic to humans.
- Fuel Oil No. 2 (CAS 68476-30-2): 3 Not classifiable as to carcinogenicity to humans.
- Fuel Oil No. 6 (CAS 68553-00-4): 2B Possibly carcinogenic to humans.
- Residues (petroleum), vacuum (CAS 64741-56-6): 2B Possibly carcinogenic to humans.
- Toluene (CAS 108-88-3): 3 Not classifiable as to carcinogenicity to humans.
- Xylene (CAS 1330-20-7): 3 Not classifiable as to carcinogenicity to humans.

**NTP Report on Carcinogens**
Distillates (petroleum), intermediate catalytic cracked (CAS 64741-60-2): Known To Be Human Carcinogen.

Not regulated.

**Reproductive toxicity**
Suspected of damaging fertility or the unborn child.

**Specific target organ toxicity - single exposure**
Not classified.

**Specific target organ toxicity - repeated exposure**
May cause damage to organs (Blood, Liver, Thymus) through prolonged or repeated exposure.

**Aspiration hazard**
May be fatal if swallowed and enters airways.

**Chronic effects**
May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. Contains hydrogen sulfide. May rapidly cause irritation, breathing failure, coma, and death without necessarily any warning odor being sensed.

**12. Ecological information**

**Ecotoxicity**
Very toxic to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
</table>
| Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4) | **Aquatic**  
**Chronic**  
Fish | NOAEL | Oncorhynchus mykiss | 0.1 mg/l, 28 days |
<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (petroleum), intermediate catalytic cracked (CAS 64741-60-2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Chronic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish NOAEL</td>
<td>Oncorhynchus mykiss</td>
<td>0.029 mg/l, 14 days</td>
</tr>
<tr>
<td>Ethylbenzene (CAS 100-41-4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea EC50</td>
<td>Water flea (Daphnia magna)</td>
<td>1.81 - 2.38 mg/l, 48 hours</td>
</tr>
<tr>
<td>Fish LC50</td>
<td>Rainbow trout,donaldson trout (Oncorhynchus mykiss)</td>
<td>4.2 mg/l, 96 hours</td>
</tr>
<tr>
<td><strong>Chronic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea EC50</td>
<td>Ceriodaphnia dubia</td>
<td>3.6 mg/l, 7 days</td>
</tr>
<tr>
<td>Octane (CAS 111-65-9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea LC50</td>
<td>Daphnia magna</td>
<td>0.38 mg/l, 48 hours</td>
</tr>
<tr>
<td>Residues (petroleum), topping plant, low-sulfur (CAS 68607-30-7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish LC50</td>
<td>Fish</td>
<td>48 mg/l, 48 Hours</td>
</tr>
<tr>
<td>Toluene (CAS 108-88-3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Acute</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea EC50</td>
<td>Daphnia magna</td>
<td>11.5 mg/l, 48 hours</td>
</tr>
<tr>
<td>Fish LC50</td>
<td>Oncorhynchus kisutch</td>
<td>5.5 mg/l, 96 hours</td>
</tr>
<tr>
<td><strong>Chronic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crustacea NOEC</td>
<td>Ceriodaphnia dubia</td>
<td>0.74 mg/l, 7 days</td>
</tr>
<tr>
<td>Fish NOEC</td>
<td>Oncorhynchus kisutch</td>
<td>1.4 mg/l, 40 days</td>
</tr>
<tr>
<td>Xylene (CAS 1330-20-7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish LC50</td>
<td>Rainbow trout,donaldson trout (Oncorhynchus mykiss)</td>
<td>2.6 mg/l, 96 hours</td>
</tr>
</tbody>
</table>

**Persistence and degradability**
No data available.

**Bioaccumulative potential**
No data available.

**Partition coefficient n-octanol / water (log Kow)**
- Ethylbenzene (CAS 100-41-4): 3.15
- Nonane (CAS 111-84-2): 5.46
- Octane (CAS 111-65-9): 5.18
- Toluene (CAS 108-88-3): 2.73
- Xylene (CAS 1330-20-7): 3.2

**Mobility in soil**
No data available.

**Other adverse effects**
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

**13. Disposal considerations**

**Disposal instructions**
Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations**
Dispose in accordance with all applicable regulations.

**Hazardous waste code**
D001: Waste Flammable material with a flash point <140 F
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products**
Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport information

**DOT**

- **UN number**: UN1268
- **UN proper shipping name**: Petroleum distillates, n.o.s. (Fuel Oil No. 6)
- **Transport hazard class(es)**
  - Class: 3
  - Subsidiary risk: -
  - Label(s): 3
- **Packing group**: III
- **Environmental hazards**
  - Marine pollutant: Yes
  - Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.
- **Special provisions**: 144, B1, IB3, T4, TP1, TP29
- **Packaging exceptions**: 150
- **Packaging non bulk**: 203
- **Packaging bulk**: 242

**IATA**

- **UN number**: UN1268
- **UN proper shipping name**: Petroleum distillates, n.o.s. (Fuel Oil No. 6)
- **Transport hazard class(es)**
  - Class: 3
  - Subsidiary risk: -
  - Label(s): 3
- **Packing group**: III
- **Environmental hazards**
  - Marine pollutant: Yes
  - Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.

**IMDG**

- **UN number**: UN1268
- **UN proper shipping name**: PETROLEUM DISTILLATES, N.O.S. (Fuel Oil No. 6)
- **Transport hazard class(es)**
  - Class: 3
  - Subsidiary risk: -
  - Packing group: III
  - Marine pollutant: Yes
  - Environmental hazards
  - EmS: F-E, S-E
  - Special precautions for user: Read safety instructions, SDS and emergency procedures before handling.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

**General information**

IMDG Regulated Marine Pollutant. DOT Regulated Marine Pollutant.

### 15. Regulatory information

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

- **TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**
  - Nonane (CAS 111-84-2): 1.0 % One-Time Export Notification only.
  - Not regulated.
- **CERCLA Hazardous Substance List (40 CFR 302.4)**
  - Ethylbenzene (CAS 100-41-4): LISTED
  - Nonane (CAS 111-84-2): LISTED
  - Octane (CAS 111-65-9): LISTED
  - Toluene (CAS 108-88-3): LISTED
  - Xylene (CAS 1330-20-7): LISTED
Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
- Immediate Hazard - Yes
- Delayed Hazard - Yes
- Fire Hazard - Yes
- Pressure Hazard - No
- Reactivity Hazard - No

SARA 302 Extremely hazardous substance
- Not listed.

SARA 311/312 Hazardous chemical
- Yes

SARA 313 (TRI reporting)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylbenzene</td>
<td>100-41-4</td>
<td>0 - 0.3</td>
</tr>
</tbody>
</table>

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
- Ethylbenzene (CAS 100-41-4)
- Toluene (CAS 108-88-3)
- Xylene (CAS 1330-20-7)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
- Not regulated.

Safe Drinking Water Act (SDWA)
- Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number
- Toluene (CAS 108-88-3) 6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))
- Toluene (CAS 108-88-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number
- Toluene (CAS 108-88-3) 594

US state regulations

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
- Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)
- Ethylbenzene (CAS 100-41-4)
- Fuel Oil No. 6 (CAS 68553-00-4)
- Toluene (CAS 108-88-3)

US. Massachusetts RTK - Substance List
- Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)
- Distillates (petroleum), intermediate catalytic cracked (CAS 64741-60-2)
- Ethylbenzene (CAS 100-41-4)
- Fuel Oil No. 6 (CAS 68553-00-4)
- Nonane (CAS 111-84-2)
- Octane (CAS 111-65-9)
- Toluene (CAS 108-88-3)
- Xylene (CAS 1330-20-7)

US. New Jersey Worker and Community Right-to-Know Act
- Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)
- Distillates (petroleum), intermediate catalytic cracked (CAS 64741-60-2)
- Ethylbenzene (CAS 100-41-4)
- Fuel Oil No. 2 (CAS 68476-30-2)
- Nonane (CAS 111-84-2)
- Octane (CAS 111-65-9)
- Toluene (CAS 108-88-3)
- Xylene (CAS 1330-20-7)

US. Pennsylvania Worker and Community Right-to-Know Law
- Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)
- Distillates (petroleum), intermediate catalytic cracked (CAS 64741-60-2)
- Ethylbenzene (CAS 100-41-4)
- Fuel Oil No. 2 (CAS 68476-30-2)
- Nonane (CAS 111-84-2)

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
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- Octane (CAS 111-65-9)
- Toluene (CAS 108-88-3)
- Xylene (CAS 1330-20-7)

US. Pennsylvania Worker and Community Right-to-Know Law
- Clarified oils (Petroleum), catalytic cracked (CAS 64741-62-4)
- Distillates (petroleum), intermediate catalytic cracked (CAS 64741-60-2)
- Ethylbenzene (CAS 100-41-4)
- Fuel Oil No. 2 (CAS 68476-30-2)
- Nonane (CAS 111-84-2)

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.
Octane (CAS 111-65-9)
Toluene (CAS 108-88-3)
Xylene (CAS 1330-20-7)

US. Rhode Island RTK
Distillates (petroleum), intermediate catalytic cracked (CAS 64741-60-2)
Ethylbenzene (CAS 100-41-4)
Fuel Oil No. 6 (CAS 68553-00-4)
Nonane (CAS 111-84-2)
Octane (CAS 111-65-9)
Residues (petroleum), vacuum (CAS 64741-56-6)
Toluene (CAS 108-88-3)
Xylene (CAS 1330-20-7)

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>No</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>No</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>No</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
* A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 27-February-2017
Revision date -
Version # 01
HMIS® ratings
Health: 3*
Flammability: 2
Physical hazard: 0

Disclaimer
Énergie Valero Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.