1. **PRODUCT AND COMPANY IDENTIFICATION**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Natural Gas Condensate, Sweet or Sour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Sweet Condensate, Sour Condensate, Lease Condensate (Sweet or Sour), Field Condensate (Sweet or Sour), Casing Head Gasoline (Sweet or Sour), Natural Gas Liquids (Sweet or Sour), Gas Drips (Sweet or Sour), Natural Gas Condensate C2-C8 (Sweet or Sour)</td>
</tr>
<tr>
<td>Chemical Family</td>
<td>Petroleum Hydrocarbon</td>
</tr>
<tr>
<td>Intended Use</td>
<td>Feedstock</td>
</tr>
<tr>
<td>MARPOL Annex I Category</td>
<td>Naphthas and Condensates</td>
</tr>
<tr>
<td>Supplier</td>
<td>J.P. Morgan Ventures Energy Corp. 383 Madison Avenue, 10th Floor New York, NY 10017 JP Morgan Commodities Canada Corp. Suite 600, Vintage Towers II, 326 11th Avenue SW Calgary, Alberta T2R 0C5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>24 Hour Emergency Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemtrec: 800-424-9300</td>
</tr>
<tr>
<td>JP Morgan Technical Information: 212-834-5788 (USA), 403-532-2000 (Canada)</td>
</tr>
<tr>
<td>California Poison Control: 800-356-3219</td>
</tr>
</tbody>
</table>

2. **HAZARDS IDENTIFICATION**

**GHS Classification**
- H224: Flammable liquid – Category 1
- H304: May be fatal if swallowed and enters airways – Category 1
- H319: Eye damage/irritation – Category 2
- H335: May cause respiratory irritation – Category 3
- H336: Specific target organ toxicity (single exposure) – Category 3
- H350: Carcinogenicity – Category 1B
- H411: Hazardous to the aquatic environment, chronic toxicity – Category 2

**Hazards Not Otherwise Classified**
- May contain or release poisonous hydrogen sulfide gas

**Signal Words**
- Danger

**GHS Hazard Statements**
- H224: Extremely flammable liquid and vapor
- H304: May cause cancer
- H304: May be fatal if swallowed and enters airways
- H319: Causes serious eye irritation
- H336: May cause drowsiness or dizziness
- H315: Causes skin irritation
- H331: Toxic if inhaled
- H411: Toxic to aquatic life with long lasting effects

**GHS Precautionary Statements**
- P201: Obtain special instructions before use
- P202: Do not handle until all safety precautions have been read and understood
- P210: Keep away from heat/sparks/open flames/hot surfaces – no smoking
- P233: Keep container tightly closed
- P240: Ground/bond container and receiving equipment
2. HAZARDS IDENTIFICATION

P241 Use explosion-proof electrical/ventilating/lighting equipment
P242 Use only non-sparking tools
P243 Take precautionary measures against static discharge
P261 Avoid breathing dust/fume/gas/mist/vapours/spray
P264 Wash thoroughly after handling
P271 Use only outdoors or in a well-ventilated area
P273 Avoid release to the environment
P280 Wear protective gloves / protective clothing / eye protection / face protection
P361, P352, P363 IF ON SKIN OR HAIR: Remove/take off immediately all contaminated clothing. Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse.
P305, P351, P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P313 If eye irritation persists, get medical advice/attention
P301, P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P331 If eye irritation persists, get medical advice/attention
P312 If eye irritation persists, get medical advice/attention
P304, P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P314 If eye irritation persists, get medical advice/attention
P315 Call a POISON CENTER or doctor/physician if you feel unwell
P370, P378 In case of fire: Use dry chemical, carbon dioxide, or foam for extinction
P391 Collect spillage
P405 Store locked up
P403, P233, P235 Store in a well-ventilated place. Keep container tightly closed, Keep cool
P501 Dispose of contents/container to approved facility

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS Registration No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas Condensate C2-C8</td>
<td>68919-39-1</td>
<td>100</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>0.1 - 5</td>
</tr>
<tr>
<td>n-Butane</td>
<td>106-97-8</td>
<td>5 - 15</td>
</tr>
<tr>
<td>Cyclohexane</td>
<td>110-82-7</td>
<td>&lt; 1 - 5</td>
</tr>
<tr>
<td>Ethyl Benzene</td>
<td>100-41-4</td>
<td>&lt; 1 - 3</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>142-82-5</td>
<td>10 - 20</td>
</tr>
<tr>
<td>n-Hexane</td>
<td>110-54-3</td>
<td>2 - 50</td>
</tr>
<tr>
<td>Hexane (all isomers)</td>
<td>mixture</td>
<td>2 - 50</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>7783-06-4</td>
<td>&lt; 0.1 - 20</td>
</tr>
<tr>
<td>Methylcyclohexane</td>
<td>108-87-2</td>
<td>5 - 10</td>
</tr>
<tr>
<td>n-Nonane</td>
<td>111-84-2</td>
<td>5 - 15</td>
</tr>
<tr>
<td>n-Octane</td>
<td>111-65-9</td>
<td>10 - 20</td>
</tr>
<tr>
<td>n-Pentane</td>
<td>109-66-0</td>
<td>5 - 20</td>
</tr>
<tr>
<td>n-Propane</td>
<td>74-98-6</td>
<td>&lt;1 - 8</td>
</tr>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>&lt; 1 - 15</td>
</tr>
<tr>
<td>1,2,4 Trimethyl Benzene</td>
<td>95-63-6</td>
<td>&lt; 1 – 4</td>
</tr>
<tr>
<td>Xylene, all isomers</td>
<td>1330-20-7</td>
<td>&lt; 1 – 12</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

**Inhalation (Breathing)** Move the exposed person to fresh air. If not breathing, clear airways and give artificial respiration. If breathing is difficult, humidified oxygen should be administered by qualified personnel. Seek medical attention if breathing difficulties continue.
4. FIRST AID MEASURES

**Eye Contact**
Flush eyes with water for at least 15 minutes. Hold eyelids apart to ensure complete irrigation of the eye. Remove contact lenses, if worn, after initial flushing. Do not use eye ointment. Seek medical attention.

**Skin Contact**
Remove contaminated shoes and clothing, and flush affected areas with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, clean affected area thoroughly with mild soap and water. Launder or discard contaminated clothing.

**Ingestion (Swallowing)**
Aspiration hazard. Do not induce vomiting or give anything by mouth because the material can enter the lungs and cause severe lung damage. If spontaneous vomiting is about to occur, place victim's head below knees. If victim is drowsy or unconscious, place on the left side with head down. Do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

**Most Important Symptoms and Effects**

- **Acute:** Headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue
- **Delayed:** Dry skin and possible irritation with repeated or prolonged exposure

**Potential Acute Health Effects**
**Inhalation:** Breathing high concentrations may be harmful. Mist or vapor can irritate the throat and lungs. Breathing this material may cause central nervous system depression with symptoms including nausea, headache, dizziness, fatigue, drowsiness or unconsciousness. This material may contain or liberate hydrogen sulfide, a poisonous gas with the smell of rotten eggs. Hydrogen sulfide and other hazardous vapors may evolve and collect in the headspace of storage tanks or other enclosed vessels. The smell disappears rapidly because of olfactory fatigue so odor may not be a reliable indicator of exposure. Effects of overexposure include irritation of the eyes, nose, throat and respiratory tract, blurred vision, photophobia (light sensitivity) and pulmonary edema (fluid accumulation in lungs). Severe exposures can result in nausea, vomiting, muscle weakness or convulsions, respiratory failure and death.

**Eye Contact:** This product can cause eye irritation from short-term contact with liquid, mists or vapors. Symptoms include stinging, watering, redness and swelling. Effects may be more serious with repeated or prolonged contact. Hydrogen sulfide vapors may cause moderate to severe eye irritation and photophobia (light sensitivity).

**Skin Contact:** This product is a skin irritant. Contact may cause redness, itching, burning and skin damage.

**Ingestion:** Ingestion may result in nausea, vomiting, diarrhea and restlessness. Aspiration (inadvertent suction) of liquid into the lungs must be avoided as even small quantities in the lungs can produce chemical pneumonitis, pulmonary edema or hemorrhage and even death.

**Potential Chronic Health Effects**
Chronic effects of overexposure are similar to acute effects including central nervous system (CNS) effects and CNS depression. Effects may also include irritation of the digestive tract, irritation of the respiratory tract, nausea, vomiting and skin dermatitis.

**Notes to Physician**
This material may contain or liberate hydrogen sulfide. In high doses, hydrogen sulfide may produce pulmonary edema and respiratory depression or paralysis. The first priority in treatment should be providing adequate ventilation and administering 100% oxygen. If unresponsive to supportive care, nitrites (amyl nitrite by inhalation or sodium nitrite by I.V.) may be an effective antidote, if delivered within the first few minutes of exposure. For adults, the dose is 10 ml of a 3NaNO₂ solution (0.5 gm NaNO₂ in 15 ml water) IV over 2 to 4 minutes. The dosage should be adjusted in children or in the
4. FIRST AID MEASURES

Presence of anemia and methemoglobin levels, arterial blood gases, and electrolytes should be monitored.

Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis. Inhalation overexposure can produce toxic effects, monitor for respiratory distress. If cough or breathing difficulties develop, evaluate for upper respiratory tract inflammation, bronchitis and pneumonitis.

Skin contact may aggravate an existing dermatitis. High pressure injection injuries may cause necrosis of underlying tissue regardless of superficial appearance.

Federal regulations (29 CFR 1910.1028) specify medical surveillance programs for certain exposures to benzene above the action level or PEL (specified in Section (i)(1)(i) of the Standard). In addition, employees exposed in an emergency situation shall, as described in Section (i)(4)(i), provide a urine sample at the end of the shift for measurement of urine phenol.

5. FIRE FIGHTING MEASURES

**Flammability Classification**

- OSHA Classification (29 CFR 1910.1200): Flammable Liquid
- NFPA Class-1B Flammable Liquid
- NFPA Ratings: Health: 3, Flammability: 4, Reactivity: 0

**Flash Point**

\(-46^\circ C, -50^\circ F\) (ASTM D-56)

**Flammable Limits**

- Lower Limit: < 1%
- Upper Limit: 10%

**Autoignition Temperature**

\(232^\circ C, 450^\circ F\)

**Combustion Products**

Highly dependent on combustion conditions. Fume, smoke, carbon monoxide, carbon dioxide, sulfur and nitrogen oxides, aldehydes and unburned hydrocarbons.

**Fire and Explosion Hazards**

This material is extremely flammable and can be ignited by heat, sparks, flames or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment and electronic devices such as cell phones, computers, calculators and pagers which have not been certified as intrinsically safe). Vapors are heavier than air and can accumulate in low areas. May create vapor/air explosion hazard indoors, in confined spaces, outdoors or in sewers. Vapors may travel considerable distances to a remote source of ignition where they can ignite, flash back or explode. Product can accumulate a static charge that may cause a fire or explosion. A product container, if not properly cooled, can rupture in the heat of a fire.

**Extinguishing Media**

Dry chemical, carbon dioxide or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be
5. **FIRE FIGHTING MEASURES**

ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

**Fire Fighting**

Use water spray to cool fire-exposed containers and to protect personnel. Isolate immediate hazard area and keep unauthorized personnel out. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water. Avoid spreading burning liquid with water used for cooling. For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by regulations, a self-contained breathing apparatus should be worn. Wear other appropriate protective equipment as conditions warrant.

6. **ACCIDENTAL RELEASE MEASURES**

**Personal Precautions**

Extremely Flammable. Spillage of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof electrical equipment is recommended. Product may contain or release poisonous hydrogen sulfide gas. If the presence of dangerous amounts of H₂S around the spilled product is suspected, additional or special actions may be warranted including access restrictions and the use of protective equipment. Stay upwind and away from spill/release. Isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment as conditions warrant per Exposure Controls/Personal Protection guidelines.

**Environmental Precautions**

Stop the leak if it can be done without risk. Prevent spilled material from entering waterways, sewers, basements or confined areas. Contain release to prevent further contamination of soils, surface water or groundwater. Clean up spill as soon as possible using appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil.

**Methods for Containment and Clean Up**

Immediate cleanup of any spill is recommended. Build dike far ahead of spill for containment and later recovery or disposal of spilled material. Absorb spill with inert material such as sand or vermiculite and place in suitable container for disposal. If spilled on water, remove with appropriate equipment like skimmers, booms or absorbents. In case of soil contamination, remove contaminated soil for remediation or disposal in accordance with applicable regulations.

**Reporting**

Report spills/releases as required, to appropriate local, state and federal authorities. US Coast Guard and Environmental Protection Agency regulations require immediate reporting of spills/release that could reach any waterway including intermittent dry creeks. Report spill/release to the National Response Center at (800) 424-8802. In case of accident or road spill, notify Chemtrec at (800) 424-9300.

7. **HANDLING AND STORAGE**

**Precautions for Safe Handling**

Extremely flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas.
7. HANDLING AND STORAGE

Use non-sparking tools and explosion-proof equipment. Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. Explosion-proof electrical equipment is recommended and may be required by fire codes.

Warning! Use of this material in spaces without adequate ventilation may result in the generation of hazardous levels of combustion products and/or inadequate oxygen levels for breathing. Odor is an inadequate warning for hazardous conditions.

To prevent and minimize fire or explosion risk from static accumulation and discharge, effectively bond and/or ground product transfer system. Do not use electronic devices (such as cellular phones, computers, calculators, pagers, etc.) in or around any fueling operation or storage area unless the devices are certified as intrinsically safe. Electrical equipment and fittings should comply with local fire codes.

Precautions for Safe Storage

Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces and all sources of ignition. Post area warnings: ‘No Smoking or Open Flame’. Keep away from incompatible material. Outdoor or detached storage of portable containers is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

In a tank, barge or other closed container, the vapor space above materials containing hydrogen sulfide may result in concentrations of H₂S immediately dangerous to life or health. Check atmosphere for oxygen content, H₂S and flammability prior to entry.

Portable containers should never be filled while they are in or on a motor vehicle or marine craft. Static electricity may ignite vapors when filling non-grounded containers or vehicles on trailers. To avoid static buildup, do not use a nozzle lock open device. Use only approved containers. Keep containers tightly closed. Place the container on the ground before filling. Keep the nozzle in contact with the container during filling.

Empty containers retain liquid and vapor residues and can be dangerous. Do NOT pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat, flame, sparks, static electricity or other sources of ignition; they may explode and cause injury or death. Do not attempt to refill or clean containers since residue is difficult to remove. Empty drums should be completely drained, properly closed and returned to the supplier or a qualified drum reconditioner. All containers should be disposed of in an environmentally safe manner in accordance with government regulations.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH Exposure Limits</th>
<th>OSHA Exposure Limits</th>
<th>NIOSH Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas Condensate</td>
<td>300 ppm TWA 500 ppm STEL (as gasoline)</td>
<td>300 ppm TWA 500 ppm STEL (as petroleum distillate (naphtha))</td>
<td>450 ppm TWA 1100 ppm IDLH (as petroleum distillate (naphtha))</td>
</tr>
<tr>
<td>Benzene</td>
<td>0.5 ppm TWA 2.5 ppm STEL Skin</td>
<td>1 ppm TWA 5 ppm STEL Skin</td>
<td>0.5 ppm TWA 1 ppm STEL Skin 500 ppm IDLH</td>
</tr>
<tr>
<td>n-Butane</td>
<td>800 ppm TWA</td>
<td></td>
<td>800 ppm TWA</td>
</tr>
</tbody>
</table>
## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH Exposure Limits</th>
<th>OSHA Exposure Limits</th>
<th>NIOSH Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclohexane</td>
<td>100 ppm TWA</td>
<td>300 ppm TWA</td>
<td>300 ppm TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1300 ppm IDLH</td>
</tr>
<tr>
<td>Ethyl Benzene</td>
<td>100 ppm TWA 125 ppm STEL</td>
<td>100 ppm TWA 125 ppm STEL</td>
<td>100 ppm TWA 125 ppm STEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>800 ppm IDLH</td>
</tr>
<tr>
<td>n-Heptane</td>
<td>400 ppm TWA 500 ppm STEL</td>
<td>500 ppm TWA</td>
<td>85 ppm TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>440 ppm Ceiling</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>750 ppm IDLH</td>
</tr>
<tr>
<td>n-Hexane</td>
<td>50 ppm TWA Skin</td>
<td>500 ppm TWA</td>
<td>50 ppm TWA</td>
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<td></td>
<td></td>
<td></td>
<td>1100 ppm IDLH</td>
</tr>
<tr>
<td>Hexane (all isomers)</td>
<td>500 ppm TWA 1000 ppm STEL</td>
<td>500 ppm TWA</td>
<td>100 ppm TWA Ceiling</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>510 ppm IDLH Ceiling</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>10 ppm TWA 15 ppm STEL</td>
<td>20 ppm Ceiling 50 ppm Peak</td>
<td>10 ppm Ceiling 100 ppm IDLH</td>
</tr>
<tr>
<td>Methylocyclohexane</td>
<td>400 ppm TWA</td>
<td>500 ppm TWA</td>
<td>400 ppm TWA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1200 ppm IDLH</td>
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<td>n-Nonane</td>
<td>200 ppm TWA</td>
<td>200 ppm TWA</td>
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<td>500 ppm TWA</td>
<td>75 ppm TWA</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>385 ppm Ceiling 1000 ppm IDLH</td>
</tr>
<tr>
<td>n-Pentane</td>
<td>600 ppm TWA</td>
<td>1000 ppm TWA</td>
<td>120 ppm TWA</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>610 ppm Ceiling 1500 ppm IDLH</td>
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<td>n-Propane</td>
<td>2500 ppm TWA</td>
<td>1000 ppm TWA</td>
<td>1000 ppm TWA Ceiling</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>2100 ppm IDLH</td>
</tr>
<tr>
<td>Toluene</td>
<td>50 ppm TWA Skin</td>
<td>200 ppm TWA 300 ppm Ceiling 500 ppm Peak-10 min</td>
<td>100 ppm TWA 150 ppm STEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>500 ppm IDLH</td>
</tr>
<tr>
<td>1,2,4 Trimethyl Benzene</td>
<td>25 ppm TWA</td>
<td>25 ppm TWA</td>
<td>25 ppm TWA</td>
</tr>
<tr>
<td>Xylene, all isomers</td>
<td>100 ppm TWA 150 ppm STEL</td>
<td>100 ppm TWA 150 ppm STEL</td>
<td>900 ppm IDLH</td>
</tr>
</tbody>
</table>

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional for further information.

ACGIH - American Conference of Government Industrial Hygienists, OSHA - Occupational Safety and Health Administration, NIOSH - National Institute for Industrial Safety and Health, TWA - Time Weighted Average (8 hour average for ACGIH and OSHA, 10 hour average for NIOSH), STEL - 15 Minute Short Term Exposure Level, Skin - indicates potential for cutaneous absorption of liquid or vapor through the eyes or mucous membranes, Ceiling - Ceiling Level, Peak - Acceptable peak over the ceiling concentration for a specified number of minutes, IDLH - Immediately Dangerous to Life and Health

**Personal Protective Equipment**

**General Considerations**

Consider the potential hazards of this material, applicable exposure limits, job activities and other substances in the work place when designing engineering controls and selecting personal protective equipment.

**Engineering Controls**

Use process enclosures, local exhaust ventilation or other engineering controls to maintain airborne levels below the recommended exposure limits. An emergency eye wash station and safety shower should be located near the work station.
Personal Protective Equipment

If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, personal protective equipment (PPE) is recommended. A hazard assessment of the work should be conducted by a qualified professional to determine what PPE is required.

Respiratory Protection

A respiratory protection program that meets or exceeds OSHA 29 CFR 1910.134 and ANSI Z.88.2 should be followed whenever workplace conditions warrant the use of a respirator. When airborne concentrations are expected to exceed the established exposure limits given in Section 8, use a NIOSH approved air purifying respirator equipped with organic vapor cartridges/canisters. Use a full-face positive-pressure supplied air respirator in circumstances where air-purifying respirators may not provide adequate protection or where there may be the potential for airborne exposure above the exposure limits. If exposure concentration is unknown, IDLH conditions exist or there is a potential for exposure to hydrogen sulfide above exposure limits, use a NIOSH approved self contained breathing apparatus (SCBA) or equivalent operated in a pressure demand or other positive pressure mode.

Eye Protection

Eye protection that meets or exceeds ANSI Z.87.1 is recommended if there is a potential for liquid contact to the eyes. Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Chemical goggles should be worn during transfer operations or when there is a likelihood of misting, splashing or spraying of this material. A face shield may be necessary depending on conditions of use.

Skin and Body Protection

Avoid skin contact. Wear long-sleeved fire-retardant garments while working with flammable and combustible liquids. Additional chemical-resistant protective gear may be required if splashing or spraying conditions exist. This may include an apron, arm covers, impervious gloves, boots and additional facial protection.

Hand Protection

Avoid skin contact. Use impervious gloves (e.g., PVC, neoprene, nitrile rubber). Check with glove suppliers to confirm the breakthrough performance of gloves. PVC and neoprene may be suitable for incidental contact. Nitrile rubber should be used for longer term protection when prolonged or frequent contact may occur. Gloves should be worn on clean hands and hands should be washed after removing gloves. Also wash hands with plenty of mild soap and water before eating, drinking, smoking, using toilet facilities or leaving work.

Special Considerations

Workplace monitoring plans should consider the possibility that heavy metals such as mercury may concentrate in process vessels and equipment presenting the possibility of exposure during sampling and maintenance operations. Mercury and other heavy metals may be present in trace quantities in crude oil, raw natural gas and condensates. Storage and processing of these materials can result in these metals, including elemental mercury, accumulating in enclosed vessels and piping, typically at the low point of the processing equipment. Mercury may also concentrate in sludges, sands, scales, waxes and filter media.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Clear to dark brown liquid</th>
<th>Physical Form</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>Strong hydrocarbon, sulfurous odor possible</td>
<td>Odor Threshold</td>
<td>Not established</td>
</tr>
<tr>
<td>pH</td>
<td>Neutral</td>
<td>Vapor Pressure</td>
<td>5 - 15 psi (Reid)</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>&gt;1 (air = 1)</td>
<td>Boiling Point/Range</td>
<td>-20-1000°F/-17-538°C</td>
</tr>
</tbody>
</table>
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Volatile</td>
<td>&gt;50%</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.6 - 0.8 @ 60°F</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flash Point</td>
<td>&lt;100°F/&lt;38°C</td>
</tr>
<tr>
<td>Explosive Limits</td>
<td>&lt; 1% LEL, 10% UEL</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Slightly soluble in water</td>
</tr>
<tr>
<td>Density</td>
<td>6.3 lb/gal @ 60°F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not established</td>
</tr>
<tr>
<td>Test Method</td>
<td>ASTM D-56</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>450°F/232°C</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Stability
Stable under normal anticipated storage and handling temperatures and pressures. Extremely flammable liquid and vapor. Vapor can cause flash fire.

Conditions to Avoid
Avoid high temperatures and all possible sources of ignition. Prevent vapor accumulation.

Incompatibility (Materials to Avoid)
Avoid contact with strong oxidizing agents such as strong acids, alkalis, chlorine and other halogens, dichromates or permanganes, which can cause fire or explosion.

Hazardous Decomposition Products
Hazardous decomposition products are not expected to form curing normal storage. The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of combustion products (e.g., oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.

Hazardous Polymerization
Not known to occur

11. TOXICOLOGICAL INFORMATION

Overview
This product is a clear to dark brown liquid with a strong hydrocarbon odor. It may also have a sulfurous or rotten egg odor. Hydrogen sulfide, an extremely flammable and very toxic gas is expected to be present. This product is a volatile and extremely flammable liquid that may cause flash fires. Keep away from heat, sparks and flames and other sources of ignition. This product contains benzene, which may cause cancer or be toxic to blood forming organs. It contains material that has caused cancer based on animal data. Never siphon this product by mouth. If swallowed, this product may be aspirated into the lungs and cause lung damage or death.

This material may contain benzene and ethyl benzene at concentrations above 0.1%. Benzene is considered to be a known human carcinogen by OSHA, IARC and NTP. IARC has ethyl benzene, gasoline and gasoline engine exhaust as possibly carcinogenic to humans (Group 2B) based on laboratory animal studiesal studies.

Toxicological Information of the Material.

Acute Toxicity
- **Dermal:** Low Toxicity: LD50 > 2000 mg/kg (rabbit)
  - Causes mild skin irritation. Repeated exposure may cause skin dryness or cracking that can lead to dermatitis.

- **Inhalation:** Hydrogen Sulfide is Extremely Toxic: LC100 = 600 ppm(v), 30 min (man)
11. TOXICOLOGICAL INFORMATION

Product expected to have low degree of toxicity by inhalation: LC 50 > 5.2 mg/l (vapor)
Effect of overexposure may include irritation of the digestive tract, irritation of the respiratory tract, nausea, vomiting, diarrhea and signs of central nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue). Continued inhalation may result in unconsciousness and/or death.

**Ingestion:** Product expected to have low degree of toxicity by ingestion: Oral LD50 > 5 g/kg (rat), > 10 g/kg (mice)
Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

**Eye Damage / Irritation Sensitization**
Causes serious eye irritation.

**Skin:** Not expected to be a skin sensitizer

**Respiratory:** Not expected to be a respiratory sensitizer

**Specific Target Organ Toxicity**

**Single Exposure:** High concentrations may cause irritation of the skin, eyes, digestive tract, irritation of the respiratory tract, nausea, vomiting, diarrhea and signs of central nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue). Continued inhalation may result in unconsciousness and/or death.

**Repeated Exposure:** Two year inhalation studies of wholly vaporized unleaded gasoline and 90 day studies of various petroleum naphthas did not produce significant target organ toxicity in laboratory animals. Nephropathy in male rates, characterized by the accumulation of alpha-2-uglobulin in epithelial cells of the proximal tubules was observed, however follow up studies suggest that these changes are unique to the male rat.

**Conditions Aggravated by Overexposure**
Disorders of the organs or organ systems that may be aggravated by significant exposure to this material or its components include the skin, respiratory system, liver, kidneys, CNS, cardiovascular system and blood-forming system.

**Carcinogenicity**
May cause cancer based on component information.

Two year inhalation studies of vaporized unleaded gasoline produced an increased incidence of kidney tumors in male rats and liver tumors in female mice. Repeated skin application of various petroleum naphthas in mice for two years resulted in an increased incidence of skin tumors but only in the presence of severe skin irritation. Follow up mechanistic studies suggest that the occurrence of these tumors may be the consequence of promotional process and not relevant to human risk assessment. Epidemiology data collected from a study of more than 18,000 petroleum marketing and distribution workers showed no increased risk of leukemia, multiple myeloma or kidney cancer from gasoline exposure.

Unleaded gasoline has been identified as a possible carcinogen by the International Agency for Research on Cancer.

**Germ Cell Mutagenicity**
Inadequate information available, not expected to be mutagenic.
11. TOXICOLOGICAL INFORMATION

Reproductive and Developmental Toxicity

Not expected to cause reproductive or developmental toxicity. No evidence of developmental toxicity was found in pregnant laboratory animals (rats and mice) exposed to high vapor concentrations of unleaded gasoline and petroleum naphthas via inhalation. A two generation reproductive toxicity study of vapor recovery gasoline did not adversely affect reproductive function or offspring survival and development.

Additional Information

Hydrogen Sulfide (H$_2$S). This material may contain or liberate H$_2$S, a poisonous gas with the smell of rotten eggs. Odor is not a reliable indicator of exposure because olfactory fatigue causes the smell to disappear. H$_2$S has a broad range of effects depending on the airborne concentration and length of exposure:
- 10 ppm: eye and respiratory tract irritation
- 100 ppm: coughing, headache, dizziness, nausea, eye irritation, loss of sense of smell in minutes
- 200 ppm: potential for pulmonary edema after 20 minutes
- 500 ppm: loss of consciousness after short exposures, potential for respiratory arrest
- 1000 ppm: Immediate loss of consciousness may lead rapidly to death, prompt cardiopulmonary resuscitation may be required.

Toxicological Information of Components

Benzene 71-43-2

Acute Data:
- Dermal LD$_{50}$ > 9400 mg/kg (Rabbit), (Guinea Pig)
- LC$_{50}$ = 9980 ppm (Mouse); 10000 ppm/7hr (Rat)
- Oral LD$_{50}$ = 4700 mg/kg (Mouse); 930 mg/kg (Rat); 5700 mg/kg (Mammal)

Carcinogenicity: Benzene is an animal carcinogen and is known to produce acute myelogenous leukemia (a form of cancer) in humans. Benzene has been identified as a human carcinogen by NTP, IARC and OSHA.

Target Organs: Prolonged or repeated exposures to benzene vapors has been linked to bone marrow toxicity which can result in blood disorders such as leukopenia, thrombocytopenia, and aplastic anemia. All of these diseases can be fatal.

Developmental: Exposure to benzene during pregnancy demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased body weight and increased skeletal variations in rodents. Alterations in hematopoeisis have been observed in the fetuses and offspring of pregnant mice.

Mutagenicity: Benzene exposure has resulted in chromosomal aberrations in human lymphocytes and animal bone marrow cells, and DNA damage in mammalian cells in vitro

Cyclohexane 110-82-7

Acute Toxicity:
- Dermal LD$_{50}$ => 2 g/kg (Rabbit)
- LC$_{50}$ > 4,044 ppm (4-hr, Rat)
- Oral LD$_{50}$ > 2 g/kg (Rat)

Target Organs: Cyclohexane can cause eye, skin and mucous membrane irritation, CNS depressant and narcosis at elevated concentrations. In experimental animals exposed to lethal concentrations by inhalation or oral route, generalized vascular damage and degenerative changes in the heart, lungs, liver, kidneys and brain were identified.

Developmental: Cyclohexane has been the focus of substantial testing in laboratory animals. Cyclohexane was not found to be genotoxic in several tests including unscheduled DNA synthesis, bacterial and mammalian cell mutation assays, and in vivo chromosomal aberration. An increase in chromosomal aberrations in bone marrow cells of rats exposed to cyclohexane was reported in the 1980’s. However, a careful reevaluation of slides from this study by the laboratory which conducted the study indicates these findings were in error, and that no significant chromosomal effects were
11. TOXICOLOGICAL INFORMATION

observed in animals exposed to cyclohexane. Findings indicate long-term exposure to cyclohexane does not promote dermal tumorigenesis.

**Ethyl Benzene  100-41-4**

**Acute Toxicity:**
- Dermal LD50 = 17800 mg/kg (Rabbit)
- LC50 = 4000 ppm/4 hr; 13367 ppm (Rat)
- Oral LD50 = 3500 mg/kg (Rat)

**Carcinogenicity:** Rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study demonstrated limited evidence of kidney, liver, and lung cancer. Ethyl benzene has been listed as a possible human carcinogen by IARC. Ethyl benzene has not been listed as a carcinogen by NTP or OSHA.

**Target Organs:** In rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study there was mild damage to the kidney (tubular hyperplasia), liver (eosinophilic foci, hypertrophy, necrosis), thyroid (hyperplasia) and pituitary (hyperplasia).

**n-Hexane  110-54-3**

**Acute Toxicity:**
- Dermal LD50 = >2,000 mg/kg (Rabbit)
- LC50 > 3,367 ppm (4 hr, Rat)
- Oral LD50 > 5,000 mg/kg (Rat)

**Target Organs:** Excessive exposure to n-hexane can result in peripheral neuropathies. The initial symptoms are symmetrical sensory numbness and paresthesias of distal portions of the extremities. Motor weakness is typically observed in muscles of the toes and fingers but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. The neurotoxic properties of n-hexane are potentiated by exposure to methyl ethyl ketone and methyl isobutyl ketone. Prolonged exposure to high concentrations of n-hexane (>1,000 ppm) has resulted in decreased sperm count and degenerative changes in the testes of rats but not those of mice.

**Hydrogen Sulfide   7783-06-4**

**Acute Toxicity:**
- Dermal - No data
- LC50 = 600 ppm, 30 min (Human)

Hydrogen sulfide concentrations will vary significantly depending on the source and sulfur content of the product. Sweet natural gas condensate (<0.5% sulfur) may contain toxicologically significant levels of hydrogen sulfide in the vapor spaces of bulk storage tanks and transport compartments. Concentrations of H2S as low as 10 ppm over an 8 hour workshift may cause eye or throat irritation. Prolonged breathing of 50-100 ppm H2S vapors can produce significant eye and respiratory irritation. Sour condensates commonly contain extremely high concentrations of H2S (500-70,000 ppm) in the vapor spaces of bulk storage vessels. Exposure to 250-600 ppm for 15-30 minutes can produce headache, dizziness, nervousness, staggering gait, nausea and pulmonary edema or bronchial pneumonia. Concentrations >1,000 ppm will cause immediate unconsciousness and death through respiratory paralysis. Rats and mice exposed to 80 ppm H2S, 6 hrs/day, 5 days/week for 10 weeks, did not produce any toxicity except for irritation of nasal passages. H2S did not affect reproduction and development (birth defects or neurotoxicity) in rats exposed to concentrations of 75-80 ppm or 150 ppm H2S, respectively. Over the years a number of acute cases of H2S poisonings have been reported. Complete and rapid recovery is the general rule. However, if the exposure was sufficiently intense and sustained causing cerebral hypoxia (lack of oxygen to the brain), neurologic effects such as amnesia, intention tremors or brain damage are possible.

**Toluene   108-88-3**

**Acute Toxicity:**
- Dermal LD50 = 14 g/kg (Rabbit)
11. TOXICOLOGICAL INFORMATION

**LC50** = 8,000 ppm (4-hr, Rat)
**Oral LD50** = 2.5 - 7.9 g/kg (Rat)
**Target Organs:** Epidemiology studies suggest that chronic occupational overexposure to toluene may damage color vision. Subchronic and chronic inhalation studies with toluene produced kidney and liver damage, hearing loss and central nervous system (brain) damage in laboratory animals. Intentional misuse by deliberate inhalation of high concentrations of toluene has been shown to cause liver, kidney, and central nervous system damage, including hearing loss and visual disturbances.
**Developmental:** Exposure to toluene during pregnancy has demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased fetal body weight and increased skeletal variations in both inhalation and oral studies.

**1,2,4 Trimethyl Benzene 95-63-6**

**Acute Toxicity:**
- **Dermal LD50** = No data available
- **LC50** = 18 gm/m³/4hr (Rat)
- **Oral LD50** = 3-6 g/kg (Rat)

**Xylenes 1330-20-7**

**Acute Toxicity:**
- **Dermal LD50** >3.16 ml/kg (Rabbit)
- **LC50** = 5000 ppm/4 hr. (Rat)
- **Oral LD50** = 4300 mg/kg (Rat)
**Target Organs:** A six week inhalation study with xylene produced hearing loss in rats.
**Developmental:** Both mixed xylenes and the individual isomers produced limited evidence of developmental toxicity in laboratory animals. Inhalation and oral administration of xylene resulted in decreased fetal weight, increased incidences of delayed ossification, skeletal variations and resorptions.

12. ECOLOGICAL INFORMATION

**Toxicity**
This material is expected to be toxic to aquatic organisms with the potential to cause long term adverse effects in the aquatic environment. Acute aquatic toxicity studies on samples of gasoline and naphtha streams show acute toxicity values greater than 1 mg/l and mostly in the range of 1 to 100 mg/l. These tests were carried out on water accommodated fractions in closed systems to prevent evaporative loss. Results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon composition.

**Classification H411, Chronic Category 2**

- 96 hours LC50: 8.3 mg/l (Cyprinodon variegatus)
- 96 hours LC50: 1.8 mg/l (Mysidopsis bahia)
- 48 hours LC50: 3.0 mg/l (Daphnia magna)
- 96 hours LC50: 2.7 mg/l (Oncorhynchus mykiss)

Coating action of oil can kill birds, plankton, aquatic life, algae and fish.

**Persistence and Degradability**
This material is not readily biodegradable. Most of the nonvolatile constituents are inherently biodegradable. Some of the highest molecular weight components are persistent in water. The individual hydrocarbon components of this material are differentially soluble in water with aromatic hydrocarbons tending to be more water soluble than aliphatic hydrocarbons. If spilled, the lighter components will generally
12. ECOLOGICAL INFORMATION

Evaporate but depending on local environmental conditions (temperature, wind, soil type, mixing or wave action in water, etc), photo-oxidation and biodegradation, the remainder may become dispersed in the water column or absorbed to soil or sediment. Because of their differential solubility, the occurrence of hydrocarbons in groundwater will be at different proportions than the parent material. Under anaerobic conditions, such as in anoxic sediments, rates of biodegradation are negligible.

Persistence per IOPC Fund Definition

<table>
<thead>
<tr>
<th>Bioaccumulative Potential</th>
<th>Non-Persistent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains components with the potential to bioaccumulate. The octanol water coefficient values measured for the hydrocarbon components of this material range from 3 to greater than 6, and therefore would be considered as having the potential to bioaccumulate.</td>
<td></td>
</tr>
</tbody>
</table>

Mobility

**Air:** Contains volatile components. Lighter components will volatilize in the air. In air, the volatile hydrocarbons undergo photodegradation by reaction with hydroxyl radicals with half lives varying from 0.5 days for n-dodecane to 6.5 days for benzene.

**Water:** Spreads on a film on the surface of water. Significant proportion of spill will remain after one day. Lower molecular weight aromatic hydrocarbons and some polar compounds have low but significant water solubility. Some higher molecular weight compounds are removed by emulsification and these also slowly biodegrade while others adsorb to sediment and sink. Heavier fractions agglomerate to form tars, some of which sink.

**Soil:** Some constituents may be mobile and contaminate groundwater.

Other Adverse Effects

Films form on water and may affect oxygen transfer and damage organisms.

13. DISPOSAL CONSIDERATIONS

Recover or recycle if possible. It is the responsibility of the generator to determine the toxicity and physical properties of the material generated so as to properly classify the waste and ensure disposal methods comply with applicable regulations.

This material, if discarded as produced, is not a RCRA "listed" hazardous waste. However, it should be fully characterized for ignitability (D001), reactivity (D003) and benzene (D018) prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

Do not dispose of tank water bottoms by draining onto the ground. This will result in soil and groundwater contamination. Waste arising from spillage or tank cleaning should be disposed of in accordance with applicable regulations.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a qualified drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.
14. TRANSPORTATION INFORMATION

**United States Department of Transportation (US DOT)**

**Shipping Description:** Petroleum Distillates, n.o.s., 3, UN1268, I or II  
**Shipping Name:** Petroleum Distillates, n.o.s (contains natural gas condensate)  
**Hazard Class and Division:** 3  
**ID Number:** UN1268  
**Packing Group:** I or II  
**Label:** Flammable Liquid  
**Placard:** Flammable  
**Reportable Quantity:** None established for this material  
**Emergency Response Guide:** 128

**International Maritime Dangerous Goods Code (IMDG)**

**Shipping Description:** Petroleum Distillates, n.o.s., 3, UN1268, I or II  
**Shipping Name:** Petroleum Distillates, n.o.s (contains natural gas condensate)  
**Hazard Class and Division:** 3  
**UN Number:** 1268  
**Label:** Flammable Liquid  
**EMS Guide:** F-E, S-E  
Not a DOT Marine Pollutant per 49 CFR 71.8

**European Agreements Concerning the International Carriage by Rail (RID) and by Road (ADR)**

**Shipping Name:** Petroleum Distillates, n.o.s (contains natural gas condensate)  
**Hazard Class:** 3  
**Packing Group:** I or II  
**Label:** Flammable Liquid  
**Danger Number:** 33  
**UN Number:** 1268

**International Civil Aviation Organization / International Air Transport Association (ICAO/IATA)**

**Shipping Name:** Petroleum Distillates, n.o.s (contains natural gas condensate) or Natural Gasoline  
**UN/ID Number:** UN1268  
**Hazard Class/Division:** 3  
**Packing Group:** I or II  
**Labels:** Flammable  
**Emergency Response Guide:** 3H

15. REGULATORY INFORMATION

**United States Federal Regulatory Information**

**EPA TSCA Inventory**  
This product and/or its components are listed on the Toxic Substances Control Act (TSCA) Inventory

**EPA SARA 302/304 Emergency Planning and Notification**  
This material contains the following chemicals subject to reporting under the Superfund Amendments and Reauthorization Act of 1986 (SARA): Material contains hydrogen sulfide, considered an extremely hazardous substance.  
TPQ= 500 lb, EPCRA RQ – 100 lb  
**Acute Health:** Yes  
**Chronic Health:** Yes  
**Fire Hazard:** Yes  
**Pressure Hazard:** No  
**Reactive Hazard:** No
15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Concentration</th>
<th>RQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>&lt; 5 %</td>
<td>10 lb</td>
</tr>
<tr>
<td>Cyclohexane</td>
<td>110-82-7</td>
<td>&lt; 5 %</td>
<td>1000 lb</td>
</tr>
<tr>
<td>Ethyl Benzene</td>
<td>100-41-4</td>
<td>&lt; 3 %</td>
<td>1000 lb</td>
</tr>
<tr>
<td>n-Hexane</td>
<td>110-54-3</td>
<td>&lt; 50 %</td>
<td>5000 lb</td>
</tr>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>&lt; 15 %</td>
<td>1000 lb</td>
</tr>
<tr>
<td>1,2,4 Trimethyl Benzene</td>
<td>95-63-6</td>
<td>&lt; 4 %</td>
<td>not listed</td>
</tr>
<tr>
<td>Xylene, all isomers</td>
<td>1330-20-7</td>
<td>&lt; 12 %</td>
<td>100 lb</td>
</tr>
</tbody>
</table>

CERCLA Section 101(14) excludes crude oil and crude oil fractions, including hazardous constituents of petroleum, from the definition of hazardous substances. The petroleum exclusion applies to this product.

EPA CWA and OPA

This product is classified as an oil under Section 311 of the Clean Water Act (CWA) and Oil Pollution Act of 1990 (OPA), subject to spill reporting requirements.

Canadian Regulatory Information

DSL/NDSL Inventory

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

Workplace Hazardous Materials Information System (WHMIS)

Hazard Class

- B2 - Flammable Liquid
- D1A – Material Causing Immediate and Serious Toxic Effects - Very Toxic Material
- D2A: Material Causing Other Toxic Effects Very Toxic
- D2B - Material Causing Other Toxic Effects - Toxic Material

European Union Regulatory Information

Labeling

Product is dangerous as defined by the European Union Dangerous Substances / Preparations Directives

Contains: Low Boiling Point Naphtha

Symbol

- F+ Extremely Flammable
- T Toxic
- N Dangerous for the Environment

Risk Phrases

R12-45-38-65-67-51/53

Extremely flammable. May cause cancer. Irritating to skin. Harmful: may cause lung damage if swallowed. Vapors may cause drowsiness and dizziness. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases

S16-53-45-2-23-24-29-43-62

Keep away from sources of ignition – No smoking. Avoid exposure – obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Keep out of reach of children. Do not breathe vapor. Avoid contact with skin. Do not empty into drains. In case of fire use foam/dry powder/CO2. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.
15. REGULATORY INFORMATION

California Proposition 65
This product may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects, or other reproductive harm and which may be subject to the warning requirements of California Proposition 65. Chemicals known to the State of California to cause cancer, birth defects or other reproductive harm are created by the combustion of this product.

Carcinogens: Benzene, Ethyl Benzene
Developmental Toxicity: Benzene, Toluene
Male Reproductive Toxicity: Benzene

Carcinogen Identification by International Agency for Research on Cancer

<table>
<thead>
<tr>
<th>Group</th>
<th>Carcinogenic to Humans</th>
<th>Toluene, Xylenes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>Carcinogen to Humans</td>
<td></td>
</tr>
<tr>
<td>Group 2A</td>
<td>Probably Carcinogenic to Humans</td>
<td></td>
</tr>
<tr>
<td>Group 2B</td>
<td>Possibly Carcinogenic to Humans</td>
<td>Ethyl Benzene, Gasoline, Gasoline Engine Exhaust</td>
</tr>
<tr>
<td>Group 3</td>
<td>Not Classifiable</td>
<td></td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

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