SECTION 1 IDENTIFICATION

Product Identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>SWEET CRUDE OIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name</td>
<td>petroleum crude oil</td>
</tr>
<tr>
<td>Synonyms</td>
<td>Light Crude</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>Petroleum crude oil</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>Not Available</td>
</tr>
<tr>
<td>CAS number</td>
<td>8002-05-9</td>
</tr>
</tbody>
</table>

Recommended use of the chemical and restrictions on use

| Relevant identified uses | Source of petrol, fuel and lubricating oils, petroleum jelly, petroleum ether, butane etc. [~Fragrance ~] |

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

| Registered company name | SGS North America |
| Address                 | 900 Georgia Ave., Deer Park, Texas 77536 United States |
| Telephone               | 281-479-7170 |
| Fax                     | Not Available |
| Website                 | www.sgs.com |
| Email                   | usogc.saman@sgs.com |

Emergency phone number

| Association / Organisation | Chem Trec |
| Emergency telephone numbers | 1-800-429-9300  Account #20017 |
| Other emergency telephone numbers | Not Available |

SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

NFPA 704 diamond

- Flammable Liquid Category 3
- Eye Irritation Category 2B
- Germ cell mutagenicity Category 1B
- Carcinogenicity Category 1B
- Specific target organ-toxicity - single exposure Category 3 (narcotic effects)
- Acute Aquatic Hazard Category 1
- Chronic Aquatic Hazard Category 1

Label elements

- GHS label elements

Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)
SIGNAL WORD DANGER

Hazard statement(s)

- **H226**: Flammable liquid and vapour.
- **H320**: Causes eye irritation.
- **H340**: May cause genetic defects.
- **H350**: May cause cancer.
- **H36**: May cause drowsiness or dizziness.
- **H410**: Very toxic to aquatic life with long lasting effects.

Hazard(s) not otherwise specified

Not Applicable

Precautionary statement(s) Prevention

- **P201**: Obtain special instructions before use.
- **P210**: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- **P271**: Use only outdoors or in a well-ventilated area.
- **P281**: Use personal protective equipment as required.

Precautionary statement(s) Response

- **P308+P313**: IF exposed or concerned: Get medical advice/attention.
- **P370+P378**: In case of fire: Use alcohol resistant foam or normal protein foam for extinction.
- **P305+P351+P338**: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P312**: Call a POISON CENTER or doctor/physician if you feel unwell.

Precautionary statement(s) Storage

- **P403+P235**: Store in a well-ventilated place. Keep cool.

Precautionary statement(s) Disposal

- **P501**: Dispose of contents/container in accordance with local regulations.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

### Substances

<table>
<thead>
<tr>
<th>CAS No</th>
<th>% [weight]</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>8002-05-9</td>
<td></td>
<td>Petroleum crude oil</td>
</tr>
<tr>
<td>Not Available</td>
<td>NotSpec.</td>
<td>A complex mixture containing</td>
</tr>
<tr>
<td>Various</td>
<td>NotSpec.</td>
<td>Paraffinic and cycloparaffinic hydrocarbons</td>
</tr>
<tr>
<td>63231-51-6</td>
<td>NotSpec.</td>
<td>Liquid hydrocarbons</td>
</tr>
<tr>
<td>130498-29-2</td>
<td>&lt;10</td>
<td>Aromatic hydrocarbons</td>
</tr>
<tr>
<td>Not Available</td>
<td>&lt;10</td>
<td>Sulfur compounds</td>
</tr>
<tr>
<td>71-43-2</td>
<td>&lt;0.5</td>
<td>Benzene</td>
</tr>
<tr>
<td>7440-62-2</td>
<td>&lt;0.5</td>
<td>Vanadium</td>
</tr>
<tr>
<td>Trace</td>
<td>Oxygen-compounds</td>
<td></td>
</tr>
<tr>
<td>Trace</td>
<td>Nitrogen compounds</td>
<td></td>
</tr>
<tr>
<td>7783-06-4</td>
<td></td>
<td>Hydrogen sulfide</td>
</tr>
</tbody>
</table>

### Mixtures

See section above for composition of Substances

SECTION 4 FIRST-AID MEASURES

**Description of first aid measures**

<table>
<thead>
<tr>
<th>Eye Contact</th>
<th>If this product comes in contact with the eyes:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Wash out immediately with fresh running water.</td>
</tr>
<tr>
<td></td>
<td>• Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</td>
</tr>
<tr>
<td></td>
<td>• Seek medical attention without delay; if pain persists or recurs seek medical attention.</td>
</tr>
<tr>
<td></td>
<td>• Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</td>
</tr>
</tbody>
</table>
### Skin Contact
If skin contact occurs:
- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

### Inhalation
If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

### Ingestion
If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.
- Avoid giving milk or oils.
- Avoid giving alcohol.
- If spontaneous vomiting appears imminent or occurs, hold patient’s head down, lower than their hips to help avoid possible aspiration of vomitus.

**Most important symptoms and effects, both acute and delayed**
See Section 11

**Indication of any immediate medical attention and special treatment needed**
For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:
- Primary threat to life, from pure petroleum distillate ingestion and/or inhalation, is respiratory failure.
- Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO2 50 mm Hg) should be intubated.
- Arhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
- Lavage is indicated in patients who require decontamination; ensure use of cuffed endotracheal tube in adult patients. [Ellenhorn and Barceloux: Medical Toxicology]

### SECTION 5 FIRE-FIGHTING MEASURES

**Extinguishing media**
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

**Special hazards arising from the substrate or mixture**
- **Fire Incompatibility**
  - Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

**Special protective equipment and precautions for fire-fighters**
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- **Fire Fighting**
  - Liquid and vapour are flammable.
  - Moderate fire hazard when exposed to heat or flame.
  - Vapour forms an explosive mixture with air.
  - Moderate explosion hazard when exposed to heat or flame.
  - Combustion products include:
    - carbon dioxide (CO2)
    - carbon monoxide (CO)
    - sulfur oxides (SOx)
    - hydrogen sulfide (H2S)
    - other pyrolysis products typical of burning organic material.
  - **CARE** Water in contact with hot liquid may cause foaming and a steam explosion with wide scattering of hot oil and possible severe burns. Foaming may cause overflow of containers and may result in possible fire.

### SECTION 6 ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures**
See section 8

**Environmental precautions**
See section 12

**Methods and material for containment and cleaning up**
SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

- Containers, even those that have been emptied, may contain explosive vapours.
- Do NOT cut, drill, grind, weld or perform similar operations on or near containers.
- DO NOT allow clothing wet with material to stay in contact with skin.
- Electrostatic discharge may be generated during pumping - this may result in fire.
- Ensure electrical continuity by bonding and grounding (earthing) all equipment.
- Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<=1 m/sec until fill pipe submerged to twice its diameter, then <= 7 m/sec).
- Avoid splash filling.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of overexposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- Store in original containers in approved flammable liquid storage area.
- Store away from incompatible materials in a cool, dry, well-ventilated area.
- DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
- No smoking, naked lights, heat or ignition sources.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

### OCCURRENCE OF THE EXPOSURE LIMITS (OEL)

<table>
<thead>
<tr>
<th>Source / Exposure Limits</th>
<th>Ingredient</th>
<th>Material name</th>
<th>TWA</th>
<th>STEL</th>
<th>Peak</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>US OSHA Permissible Exposure Levels (PELs) - Table Z1</td>
<td>petroleum crude oil</td>
<td>Oil mist, mineral</td>
<td>5 mg/m³</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>US ACGIH Threshold Limit Values (TLV)</td>
<td>petroleum crude oil</td>
<td>Mineral oil, excluding metal working fluids - Pure, highly and severely refined / Mineral oil, excluding metal working fluids - Poorly and mildly refined</td>
<td>5 mg/m³</td>
<td>Not Available</td>
<td>Not Available</td>
<td>TLV® Basis: URT irr</td>
</tr>
<tr>
<td>US NIOSH Recommended Exposure Limits (RELs)</td>
<td>petroleum crude oil</td>
<td>Aliphatic petroleum naphtha, Petroleum naphtha, Rubber solvent</td>
<td>350 mg/m³</td>
<td>Not Available</td>
<td>1800 mg/m³</td>
<td>Not Available</td>
</tr>
<tr>
<td>US OSHA Permissible Exposure Levels (PELs) - Table Z1</td>
<td>benzene</td>
<td>Benzene</td>
<td>1 ppm</td>
<td>5 ppm</td>
<td>Not Available</td>
<td>see 1910.1028 (Table Z 2.2 for the limits applicable in the operations or sectors excluded in 1910.1028d)</td>
</tr>
<tr>
<td>US OSHA Permissible Exposure Levels (PELs) - Table Z2</td>
<td>benzene</td>
<td>Benzene</td>
<td>10 ppm</td>
<td>Not Available</td>
<td>25 ppm</td>
<td>This standard applies to the industry segments exempt from the 1 ppm 8-hour TWA and 5 ppm STEL of the benzene standard at 1910.1028[Z37.40–1969]</td>
</tr>
</tbody>
</table>

### Table Z2

<table>
<thead>
<tr>
<th>Source / Exposure Limits</th>
<th>Ingredient</th>
<th>Material name</th>
<th>TWA</th>
<th>STEL</th>
<th>Peak</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>US OSHA Permissible Exposure Levels (PELs) - Table Z1</td>
<td>petroleum crude oil</td>
<td>Oil mist, mineral</td>
<td>5 mg/m³</td>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>US ACGIH Threshold Limit Values (TLV)</td>
<td>petroleum crude oil</td>
<td>Mineral oil, excluding metal working fluids - Pure, highly and severely refined / Mineral oil, excluding metal working fluids - Poorly and mildly refined</td>
<td>5 mg/m³</td>
<td>Not Available</td>
<td>Not Available</td>
<td>TLV® Basis: URT irr</td>
</tr>
<tr>
<td>US NIOSH Recommended Exposure Limits (RELs)</td>
<td>petroleum crude oil</td>
<td>Aliphatic petroleum naphtha, Petroleum naphtha, Rubber solvent</td>
<td>350 mg/m³</td>
<td>Not Available</td>
<td>1800 mg/m³</td>
<td>Not Available</td>
</tr>
<tr>
<td>US OSHA Permissible Exposure Levels (PELs) - Table Z1</td>
<td>benzene</td>
<td>Benzene</td>
<td>1 ppm</td>
<td>5 ppm</td>
<td>Not Available</td>
<td>see 1910.1028 (Table Z 2.2 for the limits applicable in the operations or sectors excluded in 1910.1028d)</td>
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<tr>
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<td>25 ppm</td>
<td>This standard applies to the industry segments exempt from the 1 ppm 8-hour TWA and 5 ppm STEL of the benzene standard at 1910.1028[Z37.40–1969]</td>
</tr>
</tbody>
</table>
SWEET CRUDE OIL

Exposure controls

Appropriate engineering controls
Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

- Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
- Process controls which involve changing the way a job activity or process is done to reduce the risk.
- Personal protection

Personal protection

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.

Skin protection

See Hand protection below

Hand/feet protection

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber
- The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- Personal hygiene is a key element of effective hand care.

Body protection

See Other protection below

Other protection

- Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent]
- Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715]
SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Viscous dark yellow to brown or greenish black oily liquid with unpleasant hydrocarbon/hydrogen sulfide odour; does not mix with water. Mixes with chloroform, ether and benzene.</td>
</tr>
<tr>
<td><strong>Crude oil consists of thousands of individual compounds.</strong> The major groups include the saturated alkanes, alkenes, benzene, alkylated and aryl benzenes, polyunsaturated aromatics, heterocyclic aromatics, and hetero-atom substituted alkanes, alkenes and aromatics. The different types of crude oil will show different ratios of these compound types.</td>
<td></td>
</tr>
<tr>
<td><strong>Physical state</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Relative density (Water = 1)</strong></td>
<td>&lt;1</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Partition coefficient</strong></td>
<td>n-octanol / water</td>
</tr>
<tr>
<td><strong>Odour threshold</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>(%)</td>
</tr>
<tr>
<td><strong>pH (as supplied)</strong></td>
<td>Not Applicable</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Melting point / freezing point</strong></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Viscosity [cSt]</strong></td>
<td>Not Available</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range [°C]</strong></td>
<td>Varies.</td>
</tr>
</tbody>
</table>
SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled
Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.

Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.

There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

Inhalation hazard is increased at higher temperatures.

Inhalation high concentrations of mixed hydrocarbons can cause narcosis, with nausea, vomiting and lightheadedness. Low molecular weight (C2-C12) hydrocarbons can irritate mucous membranes and cause incoordination, giddiness, nausea, vertigo, confusion, headache, appetite loss, drowsiness, terrors and stupor.

Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.

Inhalation of oil droplets or aerosols may cause discomfort and may produce chemical inflammation of the lungs.

Hydrogen sulfide poisoning can cause increased secretion of saliva, nausea, vomiting, diarrhoea, giddiness, headache, vertigo, memory loss, palpitations, heartbeat irregularities, weakness, muscle cramps, confusion, sudden collapse, unconsciousness and death due to paralysis of breathing (at levels above 300 parts per million). The "rotten egg" odour is not a good indicator of exposure since odour fatigue occurs and odour is lost at over 200 ppm.

Acute effects from inhalation of high concentrations of vapour are pulmonary irritation, including coughing, with nausea; central nervous system depression - characterised by headache amp; dizziness, excitation, euphoria, blurred vision, and increased reaction time, fatigue and loss of co-ordination. If exposure to highly concentrated atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and death. Inhalation of high concentrations of dense oil mists may result in oil pneumonia.

Ingestion
Accidental ingestion of the material may be damaging to the health of the individual.

Ingestion of petroleum hydrocarbons can irritate the pharynx, oesophagus, stomach and small intestine, and cause swellings and ulcers of the mucous. Symptoms include a burning mouth and throat, larger amounts can cause nausea and vomiting, narcosis, weakness, dizziness, slow and shallow breathing, abdominal swelling, unconsciousness and convulsions.

Skin Contact
Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.

Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.

There is some evidence to suggest that the material may cause moderate inflammation of the skin either following direct contact or after a delay of some time.

Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.

Open cuts, abraded or irritated skin should not be exposed to this material.

Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.

Aromatic hydrocarbons may produce sensitivity and redness of the skin. They are not likely to be absorbed into the body through the skin but branch species are more likely to.

Eye
Limited evidence or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals. Prolonged eye contact may cause inflammation characterised by a temporary redness of the conjunctiva (similar to windburn).

Exposure to H2S may produce pain, blurred vision, and reaction to eyes which may be permanent in severe cases. There is usually redness of the eyes, discomfort on exposure to light, pain, and at higher concentrations blurred vision and injury to the eyes.

Direct eye contact with petroleum hydrocarbons can be painful, and the corneal epithelium may be temporarily damaged. Aromatic species can cause irritation and excessive tear secretion.

Chronic
There is ample evidence that this material can be regarded as being able to cause cancer in humans based on experiments and other information.

Based on experiments and other information, there is ample evidence to presume that exposure to this material can cause genetic defects that can be inherited.

Substance accumulation, in the human body, may occur and may cause some concern following repeated or long term occupational exposure.

Constant or exposure over long periods to mixed hydrocarbons may produce stupor with dizziness, weakness and visual disturbance, weight loss and anaemia, and reduced liver and kidney function. Skin exposure may result in drying and cracking and redness of the skin.

Long term low level exposure to hydrogen sulfide may produce headache, fatigue, dizziness, irritability and loss of sexual desire. These symptoms may also result when exposed to hydrogen sulfide at high concentration for a short period of time.

Chronic exposure to benzene may cause headache, fatigue, loss of appetite and lassitude with incipient blood effects including anaemia and blood changes.

Benzene is a myelotoxicant known to suppress bone marrow cell proliferation and to induce haematologic disorders in humans and animals.

Polyaromatic hydrocarbons are found in a number of materials such as coal tar, tobacco smoke, petroleum and air pollution. Some substituted derivatives have been identified as extremely liable to cause cancer, especially that of the lung and genito-urinary tract.

Crude oils contain polyaromatic hydrocarbons which are carcinogenic after prolonged or repeated skin contact in laboratory animals. The presence of
various heavy metals in crude oil may result in systemic poisoning.

<table>
<thead>
<tr>
<th>Petroleum Crude Oil</th>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral (rat) LD50: &gt;4300 mg/kg [2]</td>
<td>Eye (rabbit): 100 mg mild</td>
<td></td>
</tr>
<tr>
<td>Skin (rabbit): 500 mg/24H Mild</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liquid Hydrocarbons</th>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Available</td>
<td>Not Available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aromatic Hydrocarbons</th>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral (bird) LD50: &gt;2250 mg/kg [2]</td>
<td>Not Available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Polycyclic Aromatic Hydrocarbons (benzene)</th>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal (rabbit) LD50: &gt;9400 mg/kg [2]</td>
<td>Eye (rabbit): 2 mg/24h - SEVERE</td>
<td></td>
</tr>
<tr>
<td>Inhalation (rat) LC50: 10000 ppm/7hr [2]</td>
<td>SKIN (rabbit): 20 mg/24h - moderate</td>
<td></td>
</tr>
<tr>
<td>Oral (rat) LD50: 1000 mg/kg [2]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>vanadium</th>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral (rat) LD50: &gt;2000 mg/kg [1]</td>
<td>Not Available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hydrogen sulfide</th>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation (rat) LC50: 0.7 mg/L/4hr [2]</td>
<td>Not Available</td>
<td></td>
</tr>
</tbody>
</table>

**Legend:**
1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

### PETROLEUM CRUDE OIL

The materials included in the Lubricating Base Oils category are related from both process and physical-chemical perspectives:
- The adverse effects of these materials are associated with undesirable components, and
- The levels of the undesirable components are inversely related to the degree of processing;
- Distillate base oils receiving the same degree or extent of processing will have similar toxicities;
- The potential toxicity of residual base oils is independent of the degree of processing the oil receives.
- The reproductive and developmental toxicity of the distillate base oils is inversely related to the degree of processing.

Unrefined & mildly refined distillate base oils contain the highest levels of undesirable components, have the largest variation of hydrocarbon molecules and have shown the highest potential carcinogenic and mutagenic activities. Highly and severely refined distillate base oils are produced from unrefined and mildly refined oils by removing or transforming undesirable components.

For Unrefined and Mildly Refined Distillate Base Oils

**Acute toxicity:** LD50s of >5000 mg/kg (bw) and >2g/kg (bw) for the oral and dermal routes of exposure, respectively, have been observed in rats dosed with an unrefined light paraffinic distillate. The same material was also reported to be "moderately irritating" to the skin of rabbits. When tested for eye irritation in rabbits, the material produced Draize scores of 3.0 and 4.0 (unwashed/washed eyes) at 24 hours, with the scores returning to zero by 48 hours. The material was reported to be "not sensitising" when tested in guinea pigs.

**Repeat dose toxicity:** 200, 1000 and 2000 mg/kg (bw)/day of an unrefined base oil has been applied undiluted to the skin of male and female rabbits. The test material was applied to the rabbits' skin 3 times/week for 4 weeks.

**For petroleum:**
- The product contains benzene which is known to cause acute myeloid leukemia and n-hexane which has been shown to metabolize to compounds which are neuropathic.
- This product contains toluene. There are indications from animal studies that prolonged exposure to high concentrations of toluene may lead to hearing loss.
- This product contains ethyl benzene and naphthalene from which there is evidence of tumours in rodents

**Carcinogenicity:** Inhalation exposure to mice causes liver tumours, which are not considered relevant to humans.

The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The substance is classified by IARC as Group 3.

**NOT classifiable as to its carcinogenicity to humans.**

Evidence of carcinogenicity may be inadequate or limited in animal testing. Tumorigenic - Carcinogenic by RTECS criteria.

### LIQUID HYDROCARBONS

For olefins:
- Studies have shown that normal alpha olefins have little or no toxic effect on animals except if inhaled in high concentrations. They may produce minimal skin and eye irritation, but do not sensitize the skin. Exposure to very high levels of C6-C16 normal alpha olefin vapours caused central nervous system effects, including anaesthesia (loss of sensation).
- If C20+ products are heated, fumes may produce nausea and irritation of the upper airway.

### AROMATIC HYDROCARBONS

**NOTE:** Insufficient information to identify possible hazards, including the chronic health effects, of this particular substance.

### BENZENE

**WARNING:** This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS.

**Inhalation (man) TGL: 150 ppm/7y - I**

### PETROLEUM CRUDE OIL & LIQUID HYDROCARBONS & POLYCYCLIC AROMATIC HYDROCARBONS

No significant acute toxicological data identified in literature search.

### PETROLEUM CRUDE OIL & BENZENE

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.
SECTION 12 ECOLOGICAL INFORMATION

Toxicity

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Endpoint</th>
<th>Test Duration (hr)</th>
<th>Species</th>
<th>Value</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>petroleum crude oil</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>0.00746mg/L</td>
<td>4</td>
</tr>
<tr>
<td>petroleum crude oil</td>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
<td>0.058mg/L</td>
<td>4</td>
</tr>
<tr>
<td>petroleum crude oil</td>
<td>BCF</td>
<td>54</td>
<td>Fish</td>
<td>0.2mg/L</td>
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</tr>
<tr>
<td>petroleum crude oil</td>
<td>EC20</td>
<td>168</td>
<td>Crustacea</td>
<td>0.11mg/L</td>
<td>4</td>
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<tr>
<td>petroleum crude oil</td>
<td>NOEC</td>
<td>168</td>
<td>Crustacea</td>
<td>&lt;=0.05mg/L</td>
<td>4</td>
</tr>
<tr>
<td>polycyclic aromatic hydrocarbons</td>
<td>NOEC</td>
<td>192</td>
<td>Fish</td>
<td>6.3mg/L</td>
<td>4</td>
</tr>
<tr>
<td>benzene</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>0.00520mg/L</td>
<td>4</td>
</tr>
<tr>
<td>benzene</td>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
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<tr>
<td>benzene</td>
<td>EC50</td>
<td>72</td>
<td>Algae or other aquatic plants</td>
<td>28mg/L</td>
<td>4</td>
</tr>
<tr>
<td>benzene</td>
<td>BCF</td>
<td>24</td>
<td>Algae or other aquatic plants</td>
<td>10mg/L</td>
<td>4</td>
</tr>
<tr>
<td>benzene</td>
<td>EC50</td>
<td>24</td>
<td>Crustacea</td>
<td>1.5mg/L</td>
<td>5</td>
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<tr>
<td>benzene</td>
<td>NOEC</td>
<td>480</td>
<td>Crustacea</td>
<td>ca.0.17mg/L</td>
<td>1</td>
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<tr>
<td>vanadium</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>0.65mg/L</td>
<td>2</td>
</tr>
<tr>
<td>vanadium</td>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
<td>2.387mg/L</td>
<td>2</td>
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<tr>
<td>vanadium</td>
<td>EC50</td>
<td>72</td>
<td>Algae or other aquatic plants</td>
<td>0.9894mg/L</td>
<td>2</td>
</tr>
<tr>
<td>vanadium</td>
<td>BCF</td>
<td>1440</td>
<td>Algae or other aquatic plants</td>
<td>0.0005mg/L</td>
<td>4</td>
</tr>
<tr>
<td>vanadium</td>
<td>EC50</td>
<td>72</td>
<td>Algae or other aquatic plants</td>
<td>1.12mg/L</td>
<td>2</td>
</tr>
<tr>
<td>vanadium</td>
<td>NOEC</td>
<td>72</td>
<td>Algae or other aquatic plants</td>
<td>0.0169mg/L</td>
<td>2</td>
</tr>
<tr>
<td>hydrogen sulfide</td>
<td>LC50</td>
<td>96</td>
<td>Fish</td>
<td>&lt;0.002mg/L</td>
<td>4</td>
</tr>
<tr>
<td>hydrogen sulfide</td>
<td>EC50</td>
<td>48</td>
<td>Crustacea</td>
<td>0.002mg/L</td>
<td>4</td>
</tr>
<tr>
<td>hydrogen sulfide</td>
<td>EC50</td>
<td>96</td>
<td>Algae or other aquatic plants</td>
<td>623.58mg/L</td>
<td>3</td>
</tr>
<tr>
<td>hydrogen sulfide</td>
<td>EC50</td>
<td>144</td>
<td>Fish</td>
<td>0.0061mg/L</td>
<td>5</td>
</tr>
<tr>
<td>hydrogen sulfide</td>
<td>NOEC</td>
<td>3960</td>
<td></td>
<td>0.0004mg/L</td>
<td>5</td>
</tr>
</tbody>
</table>

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. EGETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Very toxic to aquatic organisms. Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters. Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

for crude petroleum oil:

Environmental fate:
The processes determining the fate of oil in seawater are reasonably well understood. Initially, the oil spreads out as a film on the sea surface as a result of wind and wave action. The more volatile, lower molecular weight hydrocarbons are lost by evaporation. Polar compounds and the mono-aromatic hydrocarbons have an appreciable water solubility and are taken into solution.

for lubricating oil base stocks:

Vapor Pressure: Vapor pressures of lubricating base oils are reported to be negligible. In one study, the experimentally measured vapour pressure of a solvent-dewaxed heavy paraffinic distillate base oil was 1.7 x 10e-4 Pa. Since base oils are mixtures of C15 to C50 paraffinic, naphthenic, and aromatic hydrocarbon isomers, representative components of those structures were selected to calculate a range of vapor pressures. The estimated vapor pressure values for these selected components of base oils ranged from 4.5 x 10e-1 Pa to 2 x 10e-13Pa.

For Vanadium Compounds:

Environmental Fate: Vanadium is travels through the environment via long-range transportation in the atmosphere, water, and land by natural and man-made sources, wet and dry deposition, adsorption and complexing. From natural sources, vanadium is probably in the form of less soluble trivalent mineral particles.

Atmospheric Fate: Vanadium generally enters the atmosphere as an aerosol. Natural and man-made sources of vanadium tend to release large particles that are more likely to settle near the source.

Sulfide ion is very toxic to aquatic life, threshold concentration for fresh or saltwater fish is 0.5ppm. The product therefore is very toxic to aquatic life. The major decomposition product, hydrogen sulfide, is damaging to vegetation at 0.5ppm for 24 hours. For hydrogen sulfide:

Environmental Fate: Since hydrogen sulfide exists as a gas at atmospheric pressure, partitioning to the air is likely to occur after environmental release, where it may adhere to soil and plant foliage. The compound is also soluble in oil and water, and thus may also partition to surface water, groundwater, or moist soil. Hydrogen sulfide's solubility in pure water decreases as water temperature increases. Once hydrogen sulfide is dissolved in water, it will dissociate into bisulfide and sulfide ions; the ratio and concentrations of these ions will depend on the pH of the solution.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Continued...
### Ingredient Persistence: Water/Soil Persistence: Air

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>benzene</td>
<td>HIGH (Half-life = 720 days)</td>
<td>LOW (Half-life = 20.88 days)</td>
</tr>
<tr>
<td>hydrogen sulfide</td>
<td>LOW</td>
<td>LOW</td>
</tr>
</tbody>
</table>

### Bioaccumulative potential

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>benzene</td>
<td>HIGH (BCF = 4360)</td>
</tr>
<tr>
<td>hydrogen sulfide</td>
<td>LOW (LogKOW = 0.229)</td>
</tr>
</tbody>
</table>

### Mobility in soil

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>benzene</td>
<td>LOW (KOC = 165.5)</td>
</tr>
<tr>
<td>hydrogen sulfide</td>
<td>LOW (KOC = 14.3)</td>
</tr>
</tbody>
</table>

### SECTION 13 DISPOSAL CONSIDERATIONS

**Waste treatment methods**

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.
- Otherwise:
  - If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
  - Where possible retain label warnings and SDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.

- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a landfill specifically licensed to accept chemical and/or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material).
- Decant contaminates from containers.

### SECTION 14 TRANSPORT INFORMATION

**Labels Required**

- Marine Pollutant

**Land transport (DOT)**

- **UN number**: 1267
- **UN proper shipping name**: Petroleum crude oil
- **Transport hazard class(es)**
  - Class: 3
  - Subrisk: Not Applicable
- **Packing group**: III
- **Environmental hazard**: Not Applicable
- **Special precautions for user**
  - Hazard Label: 3
  - Special provisions: 144, 357, B1, IB3, T2, TP1

**Air transport (ICAO-IATA / DGR)**

- **UN number**: 1267
<table>
<thead>
<tr>
<th>UN proper shipping name</th>
<th>Petroleum crude oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport hazard class(es)</td>
<td>ICAO/IATA Class</td>
</tr>
<tr>
<td>ICAO / IATA Subrisk</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>ERG Code</td>
<td>3L</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
</tr>
<tr>
<td>Environmental hazard</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

**Special precautions for user**

<table>
<thead>
<tr>
<th>Special provisions</th>
<th>A3A177</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cargo Only Packing Instructions</td>
<td>366</td>
</tr>
<tr>
<td>Cargo Only Maximum Qty / Pack</td>
<td>220 L</td>
</tr>
<tr>
<td>Passenger and Cargo Packing Instructions</td>
<td>365</td>
</tr>
<tr>
<td>Passenger and Cargo Maximum Qty / Pack</td>
<td>60 L</td>
</tr>
<tr>
<td>Passenger and Cargo Limited Quantity Packing Instructions</td>
<td>Y344</td>
</tr>
<tr>
<td>Passenger and Cargo Limited Maximum Qty / Pack</td>
<td>10 L</td>
</tr>
</tbody>
</table>

**Sea transport (IMDG-Code / GGVSee)**

| UN number | 1267 |
| UN proper shipping name | PETROLEUM CRUDE OIL |
| Transport hazard class(es) | IMDG Class | 3 |
| IMDG Subrisk | Not Applicable |
| Packing group | III |
| Environmental hazard | Marine Pollutant |

**Special precautions for user**

| EMS Number | F-E, S-E |
| Special provisions | 223 357 |
| Limited Quantities | 5 L |

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

### SECTION 15 REGULATORY INFORMATION

**Safety, health and environmental regulations / legislation specific for the substance or mixture**

**PETROLEUM CRUDE OIL (8002-05-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

- **International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs**
- **US - Alaska Limits for Air Contaminants**
- **US - California Permissible Exposure Limits for Chemical Contaminants**
- **US - California Proposition 65 - Carcinogens**
- **US - Hawaii Air Contaminant Limits**
- **US - Idaho - Limits for Air Contaminants**
- **US - Massachusetts - Right To Know Listed Chemicals**
- **US - Michigan Exposure Limits for Air Contaminants**
- **US - Minnesota Permissible Exposure Limits (PELs)**
- **US - Oregon Permissible Exposure Limits (Z-1)**
- **US - Pennsylvania - Hazardous Substance List**
- **US - Rhode Island Hazardous Substance List**

**US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants**

**US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants**

**US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants**

**US - Washington permissable exposure limits of air contaminants**

**US AGIHC Threshold Limit Values (TLV)**

**US AGIHC Threshold Limit Values (TLV) - Carcinogens**

**US - National Toxicology Program (NTP) 14th Report Part A Known to be Human Carcinogens**

**US National Toxicology Program (NTP) 14th Report Part A Known to be Human Carcinogens**

**US NIOSH Recommended Exposure Limits (RELs)**

**US OSHA Permissible Exposure Limits (PELs) - Table Z1**

**US Priority List for the Development of Proposition 65 Safe Harbor Levels - No Significant Risk Levels (NSRLs) for Carcinogens and Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity**

**US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory**

**LIQUID HYDROCARBONS (VARIOUS) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Not Applicable

**AROMATIC HYDROCARBONS (63231-51-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Not Applicable

**POLYCYCLIC AROMATIC HYDROCARBONS (130488-29-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

**US Clean Air Act - Hazardous Air Pollutants**

**US EPCRA Section 313 Chemical List**

**BENZENE (71-43-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Continued...
HYDROGEN SULFIDE (7783-06-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELS)
US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELS)
US - California Permissible Exposure Limits for Chemical Contaminants
US - California Proposition 65 - Carcinogens
US - California Proposition 65 - Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity
US - California Proposition 65 - No Significant Risk Levels (NSRLs) for Carcinogens
US - California Proposition 65 - Reproductive Toxicity
US - Connecticut Carcinogenic Substances
US - Hawaii Air Contaminant Limits
US - Idaho - Acceptable Maximum Peak Concentrations
US - Idaho - Limits for Air Contaminants
US - Massachusetts - Right To Know Listed Chemicals
US - Michigan Exposure Limits for Air Contaminants
US - Minnesota Permissible Exposure Limits (PELs)
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL); Carcinogens
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL); Mutagens
US - Oregon Permissible Exposure Limits (Z-2)
US - Pennsylvania - Hazardous Substance List
US - Rhode Island Hazardous Substance List
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants

VANADIUM (7440-62-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELS)
US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELS)
US - California Permissible Exposure Limits for Chemical Contaminants
US - Hawaii Air Contaminant Limits
US - Idaho - Acceptable Maximum Peak Concentrations
US - Idaho - Limits for Air Contaminants
US - Massachusetts - Right To Know Listed Chemicals
US - Massachusetts - Hazardous Substance List
US - Pennsylvania - Hazardous Substance List
US - Rhode Island Hazardous Substance List

US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants
US - Washington Permissible exposure limits of air contaminants
US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
US - Wyoming Toxic and Hazardous Substances Table Z-2 Acceptable ceiling concentration, Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift
US - Vermont Permissible Exposure Limits Table Z-2
US - Oregon Permissible Exposure Limits (Z-2)
US - Oregon Permissible Exposure Limits (Z-1)
US - Pennsylvania - Hazardous Substance List
US - Rhode Island Hazardous Substance List
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants

Federal Regulations
Superfund Amendments and Reauthorization Act of 1986 (SARA)

SECTION 311/312 HAZARD CATEGORIES

Immediate (acute) health hazard Yes
Delayed (chronic) health hazard Yes
Fire hazard Yes
Pressure hazard No
Reactivity hazard No

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

<table>
<thead>
<tr>
<th>Name</th>
<th>Reportable Quantity in Pounds (lb)</th>
<th>Reportable Quantity in kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>10</td>
<td>4.54</td>
</tr>
<tr>
<td>Hydrogen sulfide H2S</td>
<td>100</td>
<td>45.4</td>
</tr>
</tbody>
</table>

State Regulations
US. CALIFORNIA PROPOSITION 65
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

Continued...
Soots, tars, and mineral oils (untreated and mildly treated oils and used engine oils), Benzene Listed

<table>
<thead>
<tr>
<th>National Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia - AICS</td>
<td>N (polycyclic aromatic hydrocarbons)</td>
</tr>
<tr>
<td>Canada - DSL</td>
<td>N (polycyclic aromatic hydrocarbons; aromatic hydrocarbons)</td>
</tr>
<tr>
<td>Canada - NDSSL</td>
<td>N (polycyclic aromatic hydrocarbons; aromatic hydrocarbons; vanadium; hydrogen sulfide; benzene; petroleum crude oil)</td>
</tr>
<tr>
<td>China - IEOCSC</td>
<td>N (polycyclic aromatic hydrocarbons; petroleum crude oil)</td>
</tr>
<tr>
<td>Europe - EINEC / ELINCS / NLP</td>
<td>N (polycyclic aromatic hydrocarbons; aromatic hydrocarbons)</td>
</tr>
<tr>
<td>Japan - ENCS</td>
<td>N (polycyclic aromatic hydrocarbons; aromatic hydrocarbons; vanadium)</td>
</tr>
<tr>
<td>Korea - KECI</td>
<td>N (polycyclic aromatic hydrocarbons; aromatic hydrocarbons)</td>
</tr>
<tr>
<td>New Zealand - NZIoC</td>
<td>N (polycyclic aromatic hydrocarbons)</td>
</tr>
<tr>
<td>Philippines - PICCS</td>
<td>N (polycyclic aromatic hydrocarbons)</td>
</tr>
<tr>
<td>USA - TSCA</td>
<td>N (polycyclic aromatic hydrocarbons; aromatic hydrocarbons)</td>
</tr>
</tbody>
</table>

Legend:
Y = All ingredients are on the inventory
N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Other Information
Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations
PC – TWA: Permissible Concentration-Time Weighted Average
PC – STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL: No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

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