SAFETY DATA SHEET
Eocene Crude Oil

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
Product name : Eocene Crude Oil
Material uses : Petroleum refining
Index number : 649-049-00-5
EC number : 232-298-5

REACH Registration number

<table>
<thead>
<tr>
<th>Registration number</th>
<th>Legal entity</th>
</tr>
</thead>
<tbody>
<tr>
<td>02-2119651277-35</td>
<td></td>
</tr>
</tbody>
</table>

CAS number : 8002-05-9

1.2 Relevant identified uses of the substance or mixture and uses advised against
Not applicable.

1.3 Details of the supplier of the safety data sheet
Manufacturer / Distributor : Kuwait Petroleum Corporation
P.O. Box 26565 Safat
13126 Safat
Kuwait
Tel. +965 1858585, Fax 2423371/2467159/246

e-mail address of person responsible for this SDS : SDSinfo@Q8.com, communication preferably in English only.

1.4 Emergency telephone number
Europe : +44 (0) 1235 239 670
Global (English only) : +44 (0) 1865 407 333

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Product definition : UVCB

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
- Flam. Liq. 1, H224
- Eye Irrit. 2, H319
- Carc. 1B, H350
- STOT SE 3, H336
- STOT RE 2, H373
- Asp. Tox. 1, H304
- Aquatic Chronic 2, H411

Ingredients of unknown toxicity : None.
Ingredients of unknown ecotoxicity : None.

Classification according to Directive 67/548/EEC [DSD]
- F+: R12
- R66, R67
- R52/53
See Section 16 for the full text of the R phrases or H statements declared above.

Date of issue/Date of revision : 10/15/2012.
SECTION 2: Hazards identification

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms:

- Flammable
- Toxic
- Warning
- Reactivity

Signal word: Danger

Hazard statements:
- H224 Extremely flammable liquid and vapor.
- H319 Causes serious eye irritation.
- H350 May cause cancer.
- H336 May cause drowsiness and dizziness.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H304 May be fatal if swallowed and enters airways.
- H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

General: Not applicable.

Prevention:
- P201 - Obtain special instructions before use.
- P280 - Wear protective gloves. Wear eye or face protection.
- P210 - Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
- P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
- P273 - Avoid release to the environment.
- P260 - Do not breathe vapor.

Response:
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.
- P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Storage: P235 - Keep cool.

Disposal: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements:

Special packaging requirements:

Containers to be fitted with child-resistant fastenings: Not applicable.

Tactile warning of danger: Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII: No. PBT: Specified

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII: No. vPvB: Specified

Other hazards which do not result in classification: Hazardous concentrations of hydrogen sulphide (H2S) gas may accumulate in the vapour space of storage vessels. Standard procedures for opening or entering tanks, vessels or other containers must strictly be followed to avoid inhalation of this acutely toxic gas. Defatting to the skin.

Date of issue/Date of revision: 10/15/2012.
SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Type</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum</td>
<td>[A]</td>
<td>Flam. Liq. 1, H224</td>
</tr>
<tr>
<td></td>
<td>[B]</td>
<td>Eye Irrit. 2, H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carc. 1B, H350</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STOT SE 3, H336</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STOT RE 2, H373</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asp. Tox. 1, H304</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aquatic Chronic 2, H411</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flam. Gas 1, H220</td>
</tr>
<tr>
<td></td>
<td>[C]</td>
<td>Press. Gas, H280</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute Tox. 2, H330</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aquatic Acute 1, H400</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aquatic Chronic 1, H410</td>
</tr>
<tr>
<td>Hydrogen sulphide</td>
<td></td>
<td>See Section 16 for the full text of the H statements declared above.</td>
</tr>
</tbody>
</table>

The mineral oils in the product contain < 3% DMSO extract (IP 346).

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

[*] Substance
[A] Constituent
[B] Impurity
[C] Stabilizing additive

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If exposure to hydrogen sulphide is suspected or cannot be excluded, obtain medical attention IMMEDIATELY. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact: Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
SECTION 4: First aid measures

**Ingestion**

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Protection of first-aiders**

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

**Notes to physician**

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Ingestion**

- Specific treatments

**Over-exposure signs/symptoms**

**Eye contact**

Causes serious eye irritation.

**Inhalation**

Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.

**Skin contact**

Defatting to the skin. May cause skin dryness and irritation.

**Ingestion**

Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

**Potential acute health effects**

**Eye contact**

- Adverse symptoms may include the following:
  - pain or irritation
  - watering
  - redness

**Inhalation**

- Adverse symptoms may include the following:
  - nausea or vomiting
  - headache
  - drowsiness/fatigue
  - dizziness/vertigo
  - unconsciousness

**Skin contact**

- Adverse symptoms may include the following:
  - irritation
  - dryness
  - cracking

**Ingestion**

- Adverse symptoms may include the following:
  - nausea or vomiting

4.3 **Indication of any immediate medical attention and special treatment needed**

**Notes to physician**

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments**

No specific treatment.

SECTION 5: Firefighting measures

**5.1 Extinguishing media**

**Suitable extinguishing media**

Use dry chemical, CO₂, alcohol-resistant foam or water spray (fog).

**Unsuitable extinguishing media**

Do not use water jet.

**5.2 Special hazards arising from the substance or mixture**
SECTION 5: Firefighting measures

Hazards from the substance or mixture: Extremely flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products: Decomposition products may include the following materials:
- sulfur oxides
- Hydrogen sulphide

5.3 Advice for firefighters

Special protective actions for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and materials for containment and cleaning up

Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections: See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.

Date of issue/Date of revision: 10/15/2012.
SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures:

Put on appropriate personal protective equipment (see Section 8). Hazardous concentrations of hydrogen sulphide (H2S) gas may accumulate in the vapour space of storage vessels. Standard procedures for opening or entering tanks, vessels or other containers must strictly be followed to avoid inhalation of this acutely toxic gas. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene:

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities:

Provide adequate ventilation. Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations:

Not available.

Industrial sector specific solutions:

Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Exposure limit values</th>
</tr>
</thead>
<tbody>
<tr>
<td>hydrogen sulphide</td>
<td>EU OEL (Europe, 12/2009). Notes: list of indicative occupational exposure limit values</td>
</tr>
<tr>
<td></td>
<td>TWA: 7 mg/m³ 8 hours.</td>
</tr>
<tr>
<td></td>
<td>TWA: 5 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td>STEL: 14 mg/m³ 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>STEL: 10 ppm 15 minutes.</td>
</tr>
</tbody>
</table>
Eocene Crude Oil

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - Europe

SECTION 8: Exposure controls/personal protection

**Recommended monitoring procedures**: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Derived effect levels**: No DELs available.

**Predicted effect concentrations**: No PECs available.

8.2 Exposure controls

**Appropriate engineering controls**: Product may release hydrogen sulphide: a specific assessment of inhalation risks from the presence of hydrogen sulphide in tank headspaces, confined spaces, product residue, tank waste and waste water and unintentional releases should be made to help determine controls appropriate to local circumstances. Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Individual protection measures**

**Hygiene measures**: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection**: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

**Skin protection**

**Hand protection**: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Wear suitable gloves tested to EN374. Recommended: Nitrile gloves.

**Body protection**: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.

**Other skin protection**: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Date of issue/Date of revision: 10/15/2012.
SECTION 8: Exposure controls/personal protection

Respiratory protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: Boiling point > 65 °C: A1; Boiling point < 65 °C: AX1; Hot material: A1P2.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance
- Physical state: Liquid. [Viscous liquid.]
- Appearance: Opaque.
- Color: Brown. / Black. [Dark]
- Odor: Characteristic.
- Odor threshold: Not available.
- pH: 7
- Melting point/freezing point: -27°C
- Initial boiling point and boiling range: 0 to 750°C

Flash point: Closed cup: <0°C [ASTM D93.]
Evaporation rate: Not available.
Flammability (solid, gas): Not applicable.
Upper/lower flammability or explosive limits: Not available.
Vapor pressure: 13 kPa [room temperature]
Vapor density: Not available.
Relative density: 0.95
Solubility(ies): Very slightly soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water: Not available.
Auto-ignition temperature: >200°C
Decomposition temperature: >300°C
Viscosity (40°C): 154.4 cSt
Explosive properties: Not applicable.
Oxidizing properties: Not applicable.

9.2 Other information
No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability: The product is stable.
10.3 Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Date of issue/Date of revision: 10/15/2012.
SECTION 10: Stability and reactivity

10.4 Conditions to avoid: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

10.5 Incompatible materials: Reactive or incompatible with the following materials:
- Oxidizing materials
- Strong oxidizing materials

10.6 Hazardous decomposition products: Decomposition products may include the following materials:
- Sulfur oxides
- Hydrogen sulphide

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen sulphide</td>
<td>LC50 Inhalation Gas. Rat 444 ppm 4 hours</td>
<td>Rat</td>
<td>700 mg/m³ 4 hours</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapor Rat</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion/Summary: Not available.

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum</td>
<td>Eyes - Mild irritant Rabbit</td>
<td></td>
<td>-</td>
<td>100 milligrams 24 hours</td>
<td>500 milligrams</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant Rabbit</td>
<td></td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion/Summary: Not available.

Sensitization

Conclusion/Summary: Not available.

Mutagenicity

Conclusion/Summary: Not available.

Carcinogenicity

Conclusion/Summary: Not available.

Reproductive toxicity

Conclusion/Summary: Not available.

Teratogenicity

Conclusion/Summary: Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Narcotic effects</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum</td>
<td>Category 2</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

Aspiration hazard

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
</tbody>
</table>

Information on the likely routes of exposure: Not available.

Date of issue/Date of revision: 10/15/2012.
SECTION 11: Toxicological information

Potential acute health effects

Eye contact: Causes serious eye irritation.
Inhalation: Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
Skin contact: Defatting to the skin. May cause skin dryness and irritation.
Ingestion: Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: Adverse symptoms may include the following:
- pain or irritation
- watering
- redness
Inhalation: Adverse symptoms may include the following:
- nausea or vomiting
- headache
- drowsiness/fatigue
- dizziness/vertigo
- unconsciousness
Skin contact: Adverse symptoms may include the following:
- irritation
- dryness
- cracking
Ingestion: Adverse symptoms may include the following:
- nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects
Not available.

Conclusion/Summary: Not available.

General: May cause damage to organs through prolonged or repeated exposure.
Carcinogenicity: May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Other information: Not available.
SECTION 12: Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum</td>
<td>Acute EC50 0.61 mg/l</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>Neonate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute LC50 &gt;30 ml/L</td>
<td>Aquatic plants - Hydrilla</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>verticillata</td>
<td></td>
</tr>
<tr>
<td>Hydrogen sulphide</td>
<td>Acute LC50 0.35 ppm</td>
<td>Crustaceans - Octopus pallidus</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>Newly or recently hatched</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute LC50 7.46 µg/l</td>
<td>Fish - Oncorhynchus</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>tshawytscha</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute EC50 62 µg/l</td>
<td>Crustaceans - Gammarus pseudolimnaeus</td>
<td>2 days</td>
</tr>
<tr>
<td></td>
<td>Fresh water</td>
<td>Yolk-sac fry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acute LC50 2 µg/l</td>
<td>Fish - Coregonus clupeaformis</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Fresh water</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition coefficient (Koc) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : No.

PBT: Specified

vPvB : No.

vPvB: Specified

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

European waste catalogue (EWC)

<table>
<thead>
<tr>
<th>Waste code</th>
<th>Waste designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>05 01 05*</td>
<td>oil spills</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision : 10/15/2012.
SECTION 13: Disposal considerations

Packaging

Methods of disposal: The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions: This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

<table>
<thead>
<tr>
<th>ADR/RID</th>
<th>ADN</th>
<th>IMDG</th>
<th>IATA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 UN number</td>
<td>UN1267</td>
<td>UN 1267</td>
<td>UN1267</td>
<td>UN1267</td>
</tr>
<tr>
<td>14.2 UN proper shipping name</td>
<td>PETROLEUM CRUDE OIL</td>
<td>PETROLEUM CRUDE OIL</td>
<td>PETROLEUM CRUDE OIL</td>
<td>Marine pollutant (hydrogen sulphide)</td>
</tr>
<tr>
<td>14.3 Transport hazard class(es)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>14.4 Packing group</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
</tr>
<tr>
<td>14.5 Environmental hazards</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
<tr>
<td>14.6 Special precautions for user</td>
<td>Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.</td>
<td>Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.</td>
<td>Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.</td>
<td>Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.</td>
</tr>
<tr>
<td>Additional information</td>
<td>Hazard identification number</td>
<td>33</td>
<td>-</td>
<td>Emergency schedules (EmS)</td>
</tr>
<tr>
<td></td>
<td>Limited quantity</td>
<td>1 L</td>
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</tr>
<tr>
<td></td>
<td>Special provisions</td>
<td>357 640C</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tunnel code</td>
<td>(D/E)</td>
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</table>

Date of issue/Date of revision: 10/15/2012.
SECTION 14: Transport information

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Substances of very high concern
None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Other EU regulations

National Inventory List
- Australia inventory (AICS): All components are listed or exempted.
- China inventory (IECSC): All components are listed or exempted.
- Japan inventory: All components are listed or exempted.
- Korea inventory: All components are listed or exempted.
- Malaysia Inventory (EHS Register): Not determined.
- New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
- Philippines inventory (PICCS): All components are listed or exempted.
- Taiwan inventory (CSNN): Not determined.
- United States inventory (TSCA 8b): All components are listed or exempted.
- Europe inventory: All components are listed or exempted.
- Canada inventory: All components are listed or exempted.

Black List Chemicals: Not listed
Priority List Chemicals: Not listed
Integrated pollution prevention and control list (IPPC) - Air: Not listed
Integrated pollution prevention and control list (IPPC) - Water: Not listed

Product/ingredient name| Carcinogenic effects| Mutagenic effects| Developmental effects| Fertility effects
---|---|---|---|---
Petroleum| Carc. 1B, H350| -| -| -

Chemical Weapons Convention List Schedule I Chemicals: Not listed
Chemical Weapons Convention List Schedule II Chemicals: Not listed
Chemical Weapons Convention List Schedule III Chemicals: Not listed

15.2 Chemical Safety Assessment: Complete.

Date of issue/Date of revision: 10/15/2012.
**SECTION 16: Other information**

- **Indicates information that has changed from previously issued version.**

**Abbreviations and acronyms:**
- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number

**Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq. 1, H224</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>Eye Irrit. 2, H319</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>Carc. 1B, H350</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>STOT SE 3, H336</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>STOT RE 2, H373</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>Asp. Tox. 1, H304</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>Aquatic Chronic 2, H411</td>
<td>Expert judgment</td>
</tr>
</tbody>
</table>

**Full text of abbreviated H statements:**
- H220: Extremely flammable gas.
- H224: Extremely flammable liquid and vapor.
- H280: Contains gas under pressure; may explode if heated.
- H304: May be fatal if swallowed and enters airways.
- H319: Causes serious eye irritation.
- H330: Fatal if inhaled.
- H336: May cause drowsiness and dizziness.
- H350: May cause cancer.
- H373: May cause damage to organs through prolonged or repeated exposure.
- H400: Very toxic to aquatic life.
- H410: Very toxic to aquatic life with long lasting effects.
- H411: Toxic to aquatic life with long lasting effects.

**Full text of classifications [CLP/GHS]:**
- Acute Tox. 2, H330: ACUTE TOXICITY: INHALATION - Category 2
- Aquatic Acute 1, H400: AQUATIC TOXICITY (ACUTE) - Category 1
- Aquatic Chronic 1, H410: AQUATIC TOXICITY (CHRONIC) - Category 1
- Aquatic Chronic 2, H411: AQUATIC TOXICITY (CHRONIC) - Category 2
- Asp. Tox. 1, H304: ASPIRATION HAZARD - Category 1
- Carc. 1B, H350: CARCINOGENICITY - Category 1B
- Eye Irrit. 2, H319: SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
- Flam. Gas 1, H220: FLAMMABLE GASES - Category 1
- Flam. Liq. 1, H224: FLAMMABLE LIQUIDS - Category 1
- Press. Gas Comp. Gas, H280: GASES UNDER PRESSURE - Compressed gas
- STOT RE 2, H373: SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
- STOT SE 3, H336: SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Narcotic effects] - Category 3

**Full text of abbreviated R phrases:**
- R12: Extremely flammable.
- R26: Very toxic by inhalation.
- R66: Repeated exposure may cause skin dryness or cracking.
- R67: Vapors may cause drowsiness and dizziness.
- R50: Very toxic to aquatic organisms.
- R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Full text of classifications [DSD/DPD]:**
- F+: Extremely flammable
- T+: Very toxic
- N: Dangerous for the environment

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**Date of issue/Date of revision:** 10/15/2012.
**Date of previous issue:** 10/11/2012.
SECTION 16: Other information

Version : 1.02
Prepared by : Not available.

Notice to reader

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.