SAFETY DATA SHEET

SECTION 1  PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: EXXSOL™ HEPTANE FLUID
Product Description: Aliphatic Hydrocarbon

Intended Use: Solvent

COMPANY IDENTIFICATION

Supplier: EXXONMOBIL CHEMICAL COMPANY
P.O. BOX 3272
HOUSTON, TX. 77253-3272 USA
24 Hour Health Emergency (800) 726-2015
Transportation Emergency Phone (800) 424-9300 or (703) 527-3887 CHEMTREC
Product Technical Information (832) 624-8500
Supplier General Contact (832) 624-8500

SECTION 2  HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

CLASSIFICATION:

Flammable liquid: Category 2.

LABEL:

Pictogram:

Signal Word: Danger

Hazard Statements:
H225: Highly flammable liquid and vapor. H304: May be fatal if swallowed and enters airways. H315: Causes skin irritation. H336: May cause drowsiness or dizziness.
Precautionary Statements:
P210: Keep away from heat/sparks/open flames/hot surfaces. -- No smoking.  
P233: Keep container tightly closed. 
P240: Ground / bond container and receiving equipment.  
P241: Use explosion-proof electrical, ventilating, and lighting equipment.  
P242: Use only non-sparking tools.  
P243: Take precautionary measures against static discharge.  
P261: Avoid breathing mist / vapours.  
P271: Use only outdoors or in a well-ventilated area.  
P273: Avoid release to the environment. 
P280: Wear protective gloves and eye / face protection.  
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. 
P302 + P352: IF ON SKIN: Wash with plenty of soap and water. 
P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. 
P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P312: Call a POISON CENTER or doctor/physician if you feel unwell.  
P313: Do NOT induce vomiting.  
P331: Take off contaminated clothing.  
P332 + P313: If skin irritation occurs: Get medical advice/attention.  
P362 + P364: Take off contaminated clothing and wash it before reuse.  
P370 + P378: In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish.  
P391: Collect spillage. 
P403 + P235: Store in a well-ventilated place. Keep cool.  
P405: Store locked up.  
P501: Dispose of contents and container in accordance with local regulations.

Contains: NAPHTHA (PETROLEUM), HYDROTREATED LIGHT

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1900.1200.

PHYSICAL / CHEMICAL HAZARDS
Material can accumulate static charges which may cause an ignition. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

HEALTH HAZARDS
May be irritating to the eyes, nose, throat, and lungs. May cause central nervous system depression.

ENVIRONMENTAL HAZARDS
Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

NFPA Hazard ID: Health: 2 Flammability: 3 Reactivity: 0
HMIS Hazard ID: Health: 2 Flammability: 3 Reactivity: 0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a complex substance.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS#</th>
<th>Concentration*</th>
<th>GHS Hazard Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAPHTHA (PETROLEUM), HYDROTREATED LIGHT</td>
<td>64742-49-0</td>
<td>100%</td>
<td>H225, H304, H336, H315, H401, H411</td>
</tr>
</tbody>
</table>

Hazardous Constituent(s) Contained in Complex Substance(s) required for disclosure
Product Name:   EXXSOL™ HEPTANE FLUID  
Revision Date:  12 Dec 2014  
Page 3 of 14

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS#</th>
<th>Concentration*</th>
<th>GHS Hazard Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,3-DIMETHYLPENTANE</td>
<td>565-59-3</td>
<td>0 - 5%</td>
<td>H225, H304, H336, H315, H400(M factor 1), H410(M factor 1)</td>
</tr>
<tr>
<td>3,3-DIMETHYLPENTANE</td>
<td>562-49-2</td>
<td>0 - 1%</td>
<td>H225, H304, H336, H315, H400(M factor 1), H410(M factor 1)</td>
</tr>
<tr>
<td>3-ETHYL-PENTANE</td>
<td>617-78-7</td>
<td>0 - 5%</td>
<td>H225, H304, H336, H315, H400(M factor 1), H410(M factor 1)</td>
</tr>
<tr>
<td>3-METHYLHEXANE</td>
<td>589-34-4</td>
<td>0 - 30%</td>
<td>H225, H304, H336, H315, H400(M factor 1), H410(M factor 1)</td>
</tr>
<tr>
<td>HEXANE, 2-METHYL-</td>
<td>591-76-4</td>
<td>0 - 15%</td>
<td>H225, H304, H336, H315, H400(M factor 1), H410(M factor 1)</td>
</tr>
<tr>
<td>METHYLCYCLOHEXANE</td>
<td>108-87-2</td>
<td>0 - 20%</td>
<td>H225, H304, H336, H315, H401, H411</td>
</tr>
<tr>
<td>N-HEPTANE</td>
<td>142-82-5</td>
<td>30 - 45%</td>
<td>H225, H304, H336, H315, H400(M factor 1), H410(M factor 1)</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume. Concentration values may vary.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4  FIRST AID MEASURES

INHALATION
Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT
Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.

EYE CONTACT
Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION
Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN
If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately. This light hydrocarbon material, or a component, may be associated with cardiac sensitization following very high exposures (well above occupational exposure limits) or with concurrent exposure to high stress levels or heart-stimulating substances like epinephrine. Administration of such substances should be avoided.
SECTION 5  FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use foam, dry chemical, or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Highly flammable. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

Hazardous Combustion Products: Smoke, Fume, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES

Flash Point [Method]: -8°C (18°F) [ASTM D-56]
Flammable Limits (Approximate volume % in air): LEL: 1.1 UEL: 6.7
Autoignition Temperature: 245°C (473°F)

SECTION 6  ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H2S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.
SPILL MANAGEMENT

**Land Spill:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

**Water Spill:** Stop leak if you can do it without risk. Eliminate sources of ignition. Warn other shipping. If the Flash Point exceeds the Ambient Temperature by 10 degrees C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Air Temperature by at least 10C, use booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid contact with skin. Prevent exposure to ignition sources, for example use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Use only with adequate ventilation. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

**Loading/Unloading Temperature:** [Ambient]

**Transport Temperature:** [Ambient]

**Transport Pressure:** [Ambient]

**Static Accumulator:** This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

STORAGE

Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. The container choice, for example storage vessel, may effect static accumulation and dissipation. Keep container closed.
Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Storage containers should be grounded and bonded. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge.

**Storage Temperature:** [Ambient]

**Suitable Containers/Packing:** Tank Cars; Barges; Drums; Tank Trucks

**Suitable Materials and Coatings (Chemical Compatibility):** Carbon Steel; Polyethylene; Stainless Steel; Polypropylene; Teflon

**Unsuitable Materials and Coatings:** Natural Rubber; Butyl Rubber; Ethylene-propylene-diene monomer (EPDM); Polystyrene

### SECTION 8  EXPOSURE CONTROLS / PERSONAL PROTECTION

#### EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>Form</th>
<th>Limit / Standard</th>
<th>NOTE</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,3-DIMETHYL-PENTANE</td>
<td>STEL</td>
<td>500 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>2,3-DIMETHYL-PENTANE</td>
<td>TWA</td>
<td>400 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>3,3-DIMETHYL-PENTANE</td>
<td>STEL</td>
<td>500 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>3,3-DIMETHYL-PENTANE</td>
<td>TWA</td>
<td>400 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>3-ETHYL-PENTANE</td>
<td>STEL</td>
<td>500 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>3-ETHYL-PENTANE</td>
<td>TWA</td>
<td>400 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>3-METHYL-HEXANE</td>
<td>STEL</td>
<td>500 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>3-METHYL-HEXANE</td>
<td>TWA</td>
<td>400 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>HEXANE, 2-METHYL-</td>
<td>STEL</td>
<td>500 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>HEXANE, 2-METHYL-</td>
<td>TWA</td>
<td>400 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>METHYLCYCLOHEXANE</td>
<td>TWA</td>
<td>2000 mg/m3</td>
<td>500 ppm</td>
<td>N/A</td>
</tr>
<tr>
<td>METHYLCYCLOHEXANE</td>
<td>TWA</td>
<td>400 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>N-HEPTANE</td>
<td>TWA</td>
<td>2000 mg/m3</td>
<td>500 ppm</td>
<td>N/A</td>
</tr>
<tr>
<td>N-HEPTANE</td>
<td>STEL</td>
<td>500 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>N-HEPTANE</td>
<td>TWA</td>
<td>400 ppm</td>
<td>N/A</td>
<td>ACGIH</td>
</tr>
<tr>
<td>NAPHTHA (PETROLEUM), HYDROTREATED LIGHT</td>
<td>Vapor.</td>
<td>RCP - TWA</td>
<td>1600 mg/m3</td>
<td>395 ppm</td>
</tr>
</tbody>
</table>

**NOTE:** Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

**ENGINEERING CONTROLS**

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

- Adequate ventilation should be provided so that exposure limits are not exceeded. Use explosion-proof ventilation equipment.
PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

- Half-face filter respirator

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

- Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves.

**Eye Protection:** If contact is likely, safety glasses with side shields are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

- Chemical / oil resistant clothing if contact with material is likely.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9  PHYSICAL AND CHEMICAL PROPERTIES

**Note:** Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

**GENERAL INFORMATION**

**Physical State:** Liquid

**Form:** Clear

**Color:** Colorless

**Odor:** Mild Petroleum/Solvent

**Odor Threshold:** N/D
IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15.6 °C): 0.696
Density (at 15.6 °C): 695 kg/m³ (5.8 lbs/gal, 0.69 kg/dm³)
Flammability (Solid, Gas): N/A
Flash Point [Method]: -8°C (18°F) [ASTM D-56]
Flammable Limits (Approximate volume % in air): LEL: 1.1 UEL: 6.7
Autoignition Temperature: 245°C (473°F)
Boiling Point / Range: 94°C (201°F) - 98°C (208°F)
Decomposition Temperature: N/D
Vapor Density (Air = 1): 3.5 at 101 kPa
Vapor Pressure: 5.398 kPa (40.48 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): 4.18
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): N/D
Solubility in Water: Negligible
Viscosity: 0.49 cSt (0.49 mm2/sec) at 40 °C | 0.58 cSt (0.58 mm2/sec) at 25°C

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -57°C (-71°F)
Molecular Weight: 101
Hygroscopic: No
Coefficient of Thermal Expansion: 0.00088 V/VDEGC

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid heat, sparks, open flames and other ignition sources.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Conclusion / Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403</td>
</tr>
<tr>
<td>Acute Toxicity: (Rat) 4 hour(s) LC50 &gt; 23.3 mg/l (Vapor)</td>
<td>Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or</td>
</tr>
<tr>
<td>Irritation: No end point data for material.</td>
<td></td>
</tr>
<tr>
<td>Ingestion</td>
<td>lungs.</td>
</tr>
<tr>
<td>-----------</td>
<td>--------</td>
</tr>
<tr>
<td>Skin</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye</td>
<td></td>
</tr>
<tr>
<td>Sensitization</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspiration</td>
<td></td>
</tr>
<tr>
<td>Germ Cell Mutagenicity</td>
<td>Data available.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>No end point data for material.</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>Data available.</td>
</tr>
<tr>
<td>Lactation</td>
<td>No end point data for material.</td>
</tr>
<tr>
<td>Specific Target Organ Toxicity (STOT)</td>
<td>Single Exposure: No end point data for material.</td>
</tr>
<tr>
<td></td>
<td>Repeated Exposure: Data available.</td>
</tr>
</tbody>
</table>

**OTHER INFORMATION**

For the product itself:

Vapor/aerosol concentrations above recommended exposure levels are irritating to the eyes and respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects including death.

Prolonged and/or repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis.

Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema. Very high exposure (confined spaces / abuse) to light hydrocarbons may result in abnormal heart rhythm (arrhythmias). Concurrent high stress levels and/or co-exposure to high levels of hydrocarbons (above occupational exposure limits), and to heart-stimulating substances like epinephrine, nasal decongestants, asthma drugs, or cardiovascular drugs may initiate arrhythmias.
The following ingredients are cited on the lists below: None.

---REGULATORY LISTS SEARCHED---
1 = NTP CARC
2 = NTP SUS
3 = IARC 1
4 = IARC 2A
5 = IARC 2B
6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY
Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY
Material -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:
Material -- Expected to be readily biodegradable.

Hydrolysis:
Material -- Transformation due to hydrolysis not expected to be significant.

Photolysis:
Material -- Transformation due to photolysis not expected to be significant.

Atmospheric Oxidation:
Material -- Expected to degrade rapidly in air

OTHER ECOLOGICAL INFORMATION
VOC (EPA Method 24): 5.808 lbs/gal

ECOLOGICAL DATA

<table>
<thead>
<tr>
<th>Test</th>
<th>Duration</th>
<th>Organism Type</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic - Acute Toxicity</td>
<td>72 hour(s)</td>
<td>Pseudokirchneriella subcapitata</td>
<td>EL50 10-30 mg/l: data for similar materials</td>
</tr>
<tr>
<td>Aquatic - Acute Toxicity</td>
<td>72 hour(s)</td>
<td>Pseudokirchneriella subcapitata</td>
<td>NOELR 10 mg/l: data for similar materials</td>
</tr>
<tr>
<td>Aquatic - Acute Toxicity</td>
<td>96 hour(s)</td>
<td>Oncorhynchus mykiss</td>
<td>LL50 &gt;13.4 mg/l: data for similar materials</td>
</tr>
<tr>
<td>Aquatic - Acute Toxicity</td>
<td>48 hour(s)</td>
<td>Daphnia magna</td>
<td>EL50 3 mg/l: data for similar materials</td>
</tr>
<tr>
<td>Aquatic - Chronic Toxicity</td>
<td>21 day(s)</td>
<td>Daphnia magna</td>
<td>EL50 1.6 mg/l: data for similar materials</td>
</tr>
<tr>
<td>Aquatic - Chronic Toxicity</td>
<td>21 day(s)</td>
<td>Daphnia magna</td>
<td>NOEC 0.17 mg/l: data for similar materials</td>
</tr>
</tbody>
</table>
Persistence, Degradability and Bioaccumulation Potential

<table>
<thead>
<tr>
<th>Media</th>
<th>Test Type</th>
<th>Duration</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>Ready Biodegradability</td>
<td>28 day(s)</td>
<td>Percent Degraded 98 : similar material</td>
</tr>
</tbody>
</table>

**SECTION 13 DISPOSAL CONSIDERATIONS**

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

**DISPOSAL RECOMMENDATIONS**

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

**REGULATORY DISPOSAL INFORMATION**

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY.

**Empty Container Warning** Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

**SECTION 14 TRANSPORT INFORMATION**

**LAND (DOT)**

Proper Shipping Name: HEPTANES
Hazard Class & Division: 3
ID Number: 1206
Packing Group: II
Marine Pollutant: Yes
ERG Number: 128
Label(s): 3
Transport Document Name: UN1206, HEPTANES, 3, PG II, MARINE POLLUTANT

**LAND (TDG)**

Proper Shipping Name: HEPTANES
Hazard Class & Division: 3
UN Number: 1206
Packing Group: II
Marine Pollutant: Yes

Footnote: Marine Pollutant designation is applicable only if shipped over water.
Product Name: EXXSOL™ HEPTANE FLUID
Revision Date: 12 Dec 2014
Page 12 of 14

SEA (IMDG)
Proper Shipping Name: HEPTANES
Hazard Class & Division: 3
EMS Number: F-E, S-D
UN Number: 1206
Packing Group: II
Marine Pollutant: Yes
Label(s): 3
Transport Document Name: UN1206, HEPTANES, 3, PG II, (-8°C c.c.), MARINE POLLUTANT

SEA (MARPOL 73/78 Convention - Annex II)
Product Name: ALKANES (C6-C9)
Ship type: 2
Pollution category: X

AIR (IATA)
Proper Shipping Name: HEPTANES
Hazard Class & Division: 3
UN Number: 1206
Packing Group: II
Label(s) / Mark(s): 3
Transport Document Name: UN1206, HEPTANES, 3, PG II

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, KECI, PICCS, TSCA

EPCRA SECTION 302: This material contains no extremely hazardous substances.

CERCLA: This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

CWA / OPA: This product is classified as an oil under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Act of 1990. Discharge or spills which produce a visible sheen on either surface water, or in waterways/sewers which lead to surface water, must be reported to the National Response Center at 800-424-8802.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: Fire. Immediate Health.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>List Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,3-DIMETHYLPENTANE</td>
<td>565-59-3</td>
<td>1, 13, 16, 17</td>
</tr>
</tbody>
</table>
SECTION 16 OTHER INFORMATION

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H225: Highly flammable liquid and vapor; Flammable Liquid, Cat 2
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H336: May cause drowsiness or dizziness; Target Organ Single, Narcotic
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H401: Toxic to aquatic life; Acute Env Tox, Cat 2
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1
H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Updates made in accordance with implementation of GHS requirements.

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