This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

1. **Product and Company Identification**

   **The Lubrizol Corporation**
   29400 Lakeland Boulevard
   Wickliffe, Ohio 44092
   Tel: (440) 943-4200

   **Product Trade Name**
   PERKINS DFSC PART NO T400012

   **CAS Number**
   Not applicable for mixtures.

   **Synonyms**
   None.

   **Generic/Chemical Name**
   Confidential.

   **Product Use**
   Multipurpose.

   **Prepared By**
   Product Safety and Compliance Department (440) 943-4200

   **Preparation/Revision Date**
   04 August 2011

   **Transportation Emergency Phone No.**
   FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)

   **MSDS No.**
   11044042-1501218-0011131-102103

   **WHMIS Hazard Class**
   B3 - D2B

   **HMIRC Registry Number**
   Not Registered

   **HMIRC Exemption**
   Not Registered

   **HMIRC Filing/Grant Date**
   Not applicable.

2. **Hazards Identification**

   **Principal Hazards**
   Warning.
   - Harmful if inhaled.
   - Causes skin irritation.
   - Causes respiratory tract irritation.
   - Combustible liquid.
   - May cause eye irritation.
   - May cause chronic health effects.

   *See Section 11 for complete health hazard information.*

3. **Composition/Information on Ingredients**

   **Hazardous Ingredients**

<table>
<thead>
<tr>
<th>Comp</th>
<th>CAS No.</th>
<th>Percentage (by wt.)</th>
<th>OSHA</th>
<th>ACGIH</th>
<th>Other</th>
<th>Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>TWA</td>
<td>STEL</td>
<td>TWA</td>
<td>STEL</td>
</tr>
<tr>
<td>Petroleum naphtha</td>
<td>64742-47-8</td>
<td>From 20 to 29.9 percent</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
<tr>
<td>2-Ethylhexanol</td>
<td>104-76-7</td>
<td>From 10 to 19.9 percent</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
</tbody>
</table>

   (s) - Skin exposure
   (p) - Proposed limit
   (c) - Ceiling exposure
   (l) - Recommended exposure limit
   (u) - Supplier recommended exposure limit
   (N/E) - None established

   Confidential - See section 1 for HMIRC exemption status

4. **First Aid Measures**

   **Ingestion**
   Do NOT induce vomiting. Never give anything by mouth to a person who is losing consciousness, unconscious or convulsing. Rinse mouth and then drink plenty of water, seek medical attention Call a poison center or doctor if exposed or you feel unwell.
Rinse cautiously with water for 20 minutes or until chemical is removed. Remove contact lenses, if present and easy to do. Immediately call a poison center or doctor.

Immediately remove contaminated clothing and flush with cool water for at least 15 minutes. Get emergency medical help. Immediately remove contaminated clothing. If skin irritation occurs, get medical attention. Launder contaminated clothing before reuse and discard leather articles saturated with the material.

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is labored, administer oxygen. If breathing has stopped, apply artificial respiration. Call a poison center or doctor.

Note to physician: Treat symptomatically.

<table>
<thead>
<tr>
<th>Fire Fighting Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point</td>
</tr>
<tr>
<td>67 °C, 152.6 °F PMCC (Typical)</td>
</tr>
<tr>
<td>Extinguishing Media</td>
</tr>
<tr>
<td>CO2, dry chemical, foam, water spray, water fog. Water can be used to cool and protect exposed material</td>
</tr>
<tr>
<td>Firefighting Procedures</td>
</tr>
<tr>
<td>Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering. Use water to cool containers exposed to fire. A solid stream of water will spread the burning material. Material creates a special hazard because it floats on water. Leaking gas fires. Do not extinguish, unless leak can be stopped safely. If possible, immediately isolate material from fire. Use water with care to avoid possible violent production of steam. In case of fire, evacuate area. Do not release chemically contaminated water into drains, soil or surface water.</td>
</tr>
</tbody>
</table>

Explosion risk in case of fire. Toxic fumes, gases or vapors may evolve on burning. Vapors may be heavier than air and may travel along the ground to a distant ignition source and flash back. Container may rupture on heating. Keep material away from heat, sparks, pilot lights, static electricity and open flame. Vapors may form explosive mixtures with air. If possible, immediately isolate from fire. May explode when heated. Liquid evaporates and forms vapor (fumes) which can catch fire and burn. Prevent static discharge. DO NOT USE a solid stream of water. See section 10 for additional information.

<table>
<thead>
<tr>
<th>Accidental Release Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spill Procedures</td>
</tr>
<tr>
<td>Evacuate all non-essential personnel. Only trained personnel should be permitted in area. Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Eliminate all ignition sources if safe to do so. Ventilate spill area. Prevent entry into sewers and waterways. Small spills: contain spilled material. Transfer to secure containers. Where necessary collect using absorbent media. Larger spills: stop spill and dilute area to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbing material and shoveled into containers. Use non-sparking tools. Check under Transportation and Labeling (DOT/ CERCLA) and Other Regulatory Information Section (SARA) for hazardous substances to determine regulatory reporting requirements for spills.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Handling and Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumping Temperature</td>
</tr>
<tr>
<td>Ambient</td>
</tr>
<tr>
<td>Maximum Handling Temperature</td>
</tr>
<tr>
<td>50 °C, 122 °F</td>
</tr>
<tr>
<td>Handling Procedures</td>
</tr>
<tr>
<td>Keep away from potential sources of ignition. Open container in a well ventilated area. Avoid breathing vapors. Keep containers closed when not in use. Vapors are heavier than air and will tend to accumulate in low areas. Avoid use in confined areas without adequate ventilation. Areas of inadequate ventilation could contain concentrations high enough to cause eye irritation, headaches, respiratory discomfort or nausea. Carefully evaluate processes using this product at elevated temperatures to ensure safe operating conditions. Avoid breathing dust, fume, gas, mist, vapors or spray. Electrostatic buildup may occur when pouring or transferring this product from its container. The spark produced may be sufficient to ignite vapors of flammable liquids. Always transfer product by means which avoid static buildup. Avoid pouring product directly from its container into combustible or flammable solvent. Static ignition hazard can result from handling and use. Electrically bond and ground all containers and equipment before transfer or use of material. Keep container tightly closed. Isolate from sources of heat, sparks, and open flame. No sparking tools should be used. Use grounding and bonding connection when transferring material to prevent static discharge, fire and explosion. Use spark-resistant tools. Do not breathe thermal decomposition products. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Empty containers retain material residue. Do not cut, weld, braze, solder, drill, grind or expose containers to heat, flame, spark or other sources of ignition. Dispose of packaging or containers in accordance with local, regional, national and international regulations.</td>
</tr>
<tr>
<td>Maximum Storage Temperature</td>
</tr>
<tr>
<td>45 °C, 113 °F</td>
</tr>
<tr>
<td>Storage Procedures</td>
</tr>
<tr>
<td>Keep material away from heat, sparks, pilot lights, static electricity and open flame. Store in a well-ventilated place. Keep cool. Do not store or handle in aluminum equipment at temperatures over 120 deg F (49 deg C). Store at a temperature between 34 deg F and 120 deg F (between 1 deg C and 49 deg C). Store in containers made of same material as original container. Shelf life is two (2) years. Do not store near alkalis. Do not store near acids. See section 10 for incompatible materials.</td>
</tr>
<tr>
<td>Loading Temperature</td>
</tr>
<tr>
<td>50 °C, 122 °F</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exposure Controls/Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Exposure Limits</td>
</tr>
<tr>
<td>Contains mineral oil. Under conditions which may generate mists, observe the OSHA PEL of 5 mg per cubic meter, ACGIH STEL of 10 mg per cubic meter.</td>
</tr>
<tr>
<td>Engineering Controls</td>
</tr>
<tr>
<td>Use local exhaust ventilation to control mists or vapors. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits. Use explosion proof equipment.</td>
</tr>
</tbody>
</table>
Gloves Procedures
Natural Rubber. Polyvinyl chloride. Viton. Recommended order of use: 4H, Butyl, Neoprene, Nitrile, PVC-coated. Gloves should always be inspected before each use and discarded if they show tears, pinholes, or signs of wear.

Eye Protection
Chemical goggles or faceshield.

Respiratory Protection
Use full face respirator with a combination organic vapor and dust/mist cartridge if the recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites.

Clothing Recommendation
Long sleeve shirt is recommended. Wear either a chemical protective suit or apron when potential for contact with material exists. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction. Launder contaminated clothing before reuse.

<table>
<thead>
<tr>
<th>9</th>
<th>Physical and Chemical Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point</td>
<td>67 °C, 152.6 °F PMCC (Typical)</td>
</tr>
<tr>
<td>Upper Flammable Limit</td>
<td>Not available.</td>
</tr>
<tr>
<td>Lower Flammable Limit</td>
<td>Not available.</td>
</tr>
<tr>
<td>Autoignition Point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosion Data</td>
<td>Material does not have explosive properties.</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.89 (15.6 °C)</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>7.44 Lb/gal, 0.89 Kg/L</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Insoluble.</td>
</tr>
<tr>
<td>Percent Solid</td>
<td>Not available.</td>
</tr>
<tr>
<td>Percent Volatile</td>
<td>Not available.</td>
</tr>
<tr>
<td>Volatile Organic Compound</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour Density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
<tr>
<td>Appearance</td>
<td>Dark red Liquid.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>2600 Centistokes (0 °C)</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Pour Point Temperature</td>
<td>-54 °C, -65 °F</td>
</tr>
<tr>
<td>Melting / Freezing Point</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

The above data are typical values and do not constitute a specification.

<table>
<thead>
<tr>
<th>10</th>
<th>Stability and Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Material is normally stable at moderately elevated temperatures and pressures.</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Incompatibility</td>
<td>Strong oxidizing agents.</td>
</tr>
<tr>
<td>Polymerization</td>
<td>Will not occur.</td>
</tr>
<tr>
<td>Thermal Decomposition</td>
<td>Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11</th>
<th>Toxicological Information</th>
</tr>
</thead>
</table>

-- ACUTE EXPOSURE --

**Oral Toxicity**
The LD50 in rats is > 2000 mg/Kg. Based on data from components or similar materials. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain. Ingestion may cause CNS depression. Material can be aspirated into the lungs during the act of swallowing or vomiting. This could result in pulmonary edema and chemical pneumonitis.

**Eye Irritation**
Weak to moderate eye irritant. Does not meet EU R36 criteria. Based on data from similar materials.

**Skin Irritation**
Skin irritant. Based on data from similar materials. Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, and cracking of the skin.

**Dermal Toxicity**
The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.

**Inhalation Toxicity**
The LC50 (4 hr.) in rats for dust or mist of this material is 2.5 - 50 mg/L. Based on data from components or similar materials. High concentrations may cause headache, dizziness, nausea, behavioral changes, weakness, drowsiness and stupor.

**Respiratory Irritation**
Nose, throat and lung irritant. Based on data from similar materials. Exposure to a high concentration of vapor or mist may cause severe irritation to the nose and upper respiratory tract. Breathing of vapor or mist may aggravate asthma and inflammatory or fibrotic pulmonary disease.

**Dermal Sensitization**
No data available to indicate product or components may be a skin sensitizer.
Inhalation Sensitization
No data available to indicate product or components may be respiratory sensitizers.

-- CHRONIC EXPOSURE --

Chronic Toxicity
Repeated overexposure to petroleum naphtha can cause nervous system damage. A 14-day dermal toxicity study of 2-ethylhexanol in rats showed blood effects, decreased spleen weight and decreased triglycerides. Repeated ingestion of 2-ethylhexanol may cause injury to the liver and kidneys.

Carcinogenicity
This product contains mineral oils which are considered to be severely refined and not considered to be carcinogenic under IARC. All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test.

Reproductive Toxicity
No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.

Teratogenicity
No evidence of adverse effects were found in a developmental toxicity study of 2-ethylhexanol in rats. Doses up to 3 ml/kg applied to the skin during the most critical part of the gestation period produced evidence of toxicity to mothers, but no evidence of injury in the developing offspring. In a previous study, birth defects were observed by oral administration, an unlikely route of exposure in the workplace.

Mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

-- ADDITIONAL INFORMATION --

Other
No other health hazards known.

12 Ecological Information

-- ENVIRONMENTAL TOXICITY --

Freshwater Fish Toxicity
Not available.

Freshwater Invertebrates Toxicity
Not available.

Algal Inhibition
Not available.

Saltwater Fish Toxicity
Not available.

Saltwater Invertebrates Toxicity
Not available.

Bacteria Toxicity
Not available.

Miscellaneous Toxicity
Not available.

-- ENVIRONMENTAL FATE --

Biodegradation
Adequate data is not available to estimate the biodegradation potential of this material.

Bioaccumulation
Less than 1.0% of the components potentially bioconcentrate, based on octanol/water coefficients.

Soil Mobility
Not available.

13 Disposal Considerations

Waste Disposal
This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14 Transport Information

ICAO/IATA II
Not regulated

IMDG
Not regulated

IMDG EMS Fire
Not applicable.

IMDG EMS Spill
Not applicable.

IMDG MFAG
Not applicable.

MARPOL Annex II
Not determined.

USCG Compatibility
Not available.

Canada
Not regulated

U.S. DOT Bulk
UN1268 Petroleum distillates, n.o.s. Combustible Liquid , III

DOT NAERG
128

U.S. DOT (Intermediate)
UN1268 Petroleum distillates, n.o.s. Combustible Liquid , III

U.S. DOT Intermediate NAERG
128

U.S. DOT Non-Bulk
Not regulated

U.S. DOT Non-Bulk NAERG
Not applicable.

Bulk Quantity
85000 KG, 187391 lbs.

Intermediate Quantity
11000 KG, 24251 lbs.

Non-Bulk Quantity
400 KG, 882 lbs.

Review classification requirements before shipping materials at elevated temperatures

15 Regulatory Information
-- Global Chemical Inventories --

USA
All components of this material are on the US TSCA Inventory or are exempt.

EU
All components are in compliance with the EC Seventh amendment Directive 92/32/EEC.

Japan
This product requires notification in Japan.

Australia
A component(s) of this product has been notified and assessed under the Industrial Chemicals Act of 1989. This product may be imported only by Lubrizol Australia.

New Zealand
All components are in compliance with chemical notification requirements in New Zealand.

Canada
All components are in compliance with the Canadian Environmental Protection Act and are present on the Domestic Substances List. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

Switzerland
All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.

Korea
All components are in compliance in Korea.

Philippines
All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).

China
This product may be imported to China only by Lubrizol China.

Taiwan
May require notification before sale in Taiwan.

-- Product Registrations --

Finnish Registration Number
Not Registered

Swedish Registration Number
Not Registered

Norwegian Registration Number
Not Registered

Danish Registration Number
Not Registered

Swiss Registration Number
Not Registered

Italian Registration Number
Not Registered

-- Other / International --

Other TSCA Reg.
None known.

This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

SARA Section 313
This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.

CERCLA Hazardous Substances
None known.

Cal. Prop. 65
This product contains the following chemical(s) known to the state of California to cause cancer and/or birth defects based on maximum impurity levels of components:< 0.05 ppm Ethylene oxide, CAS no. 75-21-8 < 0.5 ppm Cumene, CAS no. 98-82-8 2 ppm Ethyl benzene, CAS no. 100-41-4 2 ppm Toluene, CAS no. 108-88-3 2 ppm Naphthalene, CAS no. 91-20-3 0.015% Propylene oxide, CAS no. 75-56-9

Miscellaneous Regulatory Information
Not available.

| 16 | Other Information |

US NFPA Codes

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
<th>Special</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>0</td>
<td>N/E</td>
</tr>
</tbody>
</table>

HMIS Codes

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2*</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

Precautionary Labels

Warning.
- Harmful if inhaled.
- Causes skin irritation.
- Causes respiratory tract irritation.
- Combustible liquid.
- May cause eye irritation.
- May cause chronic health effects.

Revision Indicators

Section: 2 Principal hazards.
Changed: 4 August 2011

Section: 4 Eyes first aid.
Changed: 29 July 2011

Section: 4 Inhalation first aid.
Changed: 4 August 2011

Section: 4 Oral first aid.
Changed: 29 July 2011

Section: 4 Skin first aid.
Changed: 29 July 2011

Section: 5 Extinguishing media.
Changed: 29 July 2011

Section: 5 Special firefighting procedures.
Changed: 29 July 2011

Section: 5 Unusual fire & explosion hazards.
Changed: 1 August 2011
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