Prepared according to Global Harmonized System (GHS) standards.

1. Substance/Product Identification

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

Product Trade Name: FZ1402AX
CAS Number: Not applicable for mixtures.
Synonyms:
Generic Chemical Name: Mixture.
Recommended Use: Multipurpose.
Restrictions on use: Not determined.
Created Date: 21 December 2011
Preparation/Revision Date: 23 August 2013

2. Hazards Identification

Appearance: Dark amber colored liquid.
Odor: Mild
Classification:
- Hazardous to the aquatic environment (acute hazard) category 3
- Hazardous to the aquatic environment (chronic hazard) category 4
Target Organs: Not determined.
Signal Word: Not determined.
Hazard statement: Harmful to aquatic life.
May cause long lasting harmful effects to aquatic life.
Other Hazards: None identified.
Precaution(s): Avoid release to the environment.
Storage Procedures: Store away from oxidizers.
Disposal: All disposal practices must be in accordance with local, national and international regulations.

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>Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrocarbon polymer</td>
<td>Confidential</td>
<td>From 30 to 39.9 percent</td>
<td>N/E</td>
</tr>
<tr>
<td>Zinc alkylidithiophosphate</td>
<td>84605-29-8</td>
<td>From 0.5 to 1.5 percent</td>
<td>N/E</td>
</tr>
<tr>
<td>Alkylated phenol</td>
<td>Confidential</td>
<td>From 0.1 to 0.9 percent</td>
<td>N/E</td>
</tr>
</tbody>
</table>

4. First Aid Measures

Eyes:
Rinse cautiously with water for 20 minutes or until chemical is removed. Remove contact lenses, if present and easy to do. If eye irritation persists, get medical attention.

Skin:
Wash with soap and water. Remove contaminated clothing. Get medical attention if irritation develops. Launder contaminated clothing before reuse.

Inhalation:
Remove exposed person to fresh air if adverse effects are observed. If irritation persists or if toxic symptoms are observed, get medical attention.

Ingestion:
Do NOT induce vomiting. Never give anything by mouth to a person who is losing consciousness, unconscious or convulsing. Call a poison center or doctor if exposed or you feel unwell.

Advice for the protection of first-aid:
When providing first aid always protect yourself against exposure to chemicals or blood born diseases by wearing gloves,
providers masks and eye protection. After providing first aid wash your exposed skin with soap and water.

Additional Information Note to physician: Treat symptomatically.

5 Fire Fighting Measures

<table>
<thead>
<tr>
<th>Flash Point</th>
<th>242 °C, 467.6 °F COC (Typical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extinguishing Media</td>
<td>CO2, dry chemical, foam, water spray, water fog. Water can be used to cool and protect exposed material.</td>
</tr>
<tr>
<td>Unsuitable Extinguishing Media</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Firefighting Procedures</td>
<td>Recommend wearing self-contained breathing apparatus. Do not use a water jet. 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. Spills produce extremely slippery surfaces. Do not release chemically contaminated water into drains, soil or surface water.</td>
</tr>
<tr>
<td>Unusual Fire &amp; Explosion Hazards</td>
<td>Elevated temperatures can lead to the formation of irritating fumes and vapors. Container may rupture in a fire situation. DO NOT USE a solid stream of water. Burning may produce irritating, toxic and obnoxious fumes. See section 10 for additional information.</td>
</tr>
</tbody>
</table>

6 Accidental Release Measures

| Personal precaution, protective equipment and emergency procedures | Only trained personnel should be permitted in area. Do not touch or walk through spilled material. Personal protective equipment must be worn. Avoid contact with skin, eyes or clothing. Ventilate area if spilled in a confined space or other poorly ventilated area. Material on floor may be slippery. |
| Environmental precaution and protective procedures | Material will float on water. Take precautions to avoid release to the environment. Do not flush into surface water, sanitary sewer or ground water system. |
| Methods for clean-up and removal | Pick up free liquid for recycle and/or disposal. Pump any free liquid into an appropriate closed container. Residual liquid can be absorbed on inert material. Place in metal containers for recovery or disposal. Wash spill area with soap and water. |

7 Handling and Storage

| Pumping Temperature | Ambient |
| Maximum Handling Temperature | 70 °C, 158 °F |
| Handling Procedures | Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. When handling, do not eat, drink, or smoke. Avoid breathing vapor. Avoid contact with eyes, skin and clothing. Ground and bond containers when transferring material. Wash thoroughly after handling. Launder contaminated clothing before reuse. 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. |
| Maximum Storage Temperature | 45 °C, 113 °F |
| Storage Procedures | Store separately from oxidizers. Take precautions to avoid release to the environment. Store in a dry, well-ventilated place. Odorous and toxic fumes may form from the decomposition of this product if stored at temperatures in excess of 113 deg F (45 deg C) for extended periods of time or if heat sources in excess of 250 deg F (121 deg C) are used. Store separately from incompatible materials. Keep container tightly closed. Ground all equipment containing material. Do not store in open, unlabeled or mislabeled containers. See section 10 for incompatible materials. |
| Maximum Loading Temperature | 70 °C, 158 °F |

8 Exposure Controls/Personal Protection

| Exposure Limits | EU Not applicable. UK Not applicable. Ireland Not applicable. India Not applicable. Cyprus Not applicable. |
| Other Exposure Limits | Contains mineral oil. Under conditions which may generate mists, observe the OSHA PEL of 5 mg per cubic meter, ACGIH TWA of 5 mg per cubic meter. |
| Engineering Controls | Material should be handled in enclosed vessels and equipment, in which case general (mechanical) room ventilation should be sufficient. Local exhaust ventilation should be used at points where dust, mist, vapors or gases can escape into the room air. |
Personal Protective Equipment

Respiratory Protection
Use half mask respirator with an organic vapor cartridge if 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.

Eye Protection
Safety glasses. If potential for splash or mist exists, wear chemical goggles or faceshield.

Gloves Procedures
Consult clothing/glove manufacturer to determine appropriate type of glove for given situation. Gloves should always be inspected before each use and discarded if they show tears, pinholes, or signs of wear.

Clothing Recommendation
Long sleeve shirt is recommended. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction. Launder contaminated clothing before reuse.

Hygiene Measures
Wash thoroughly after handling this product. Do not eat, drink or smoke when using this product.

9  Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point</td>
<td>242 °C, 467.6 °F COC (Typical)</td>
</tr>
<tr>
<td>Upper Flammable Limit</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Lower Flammable Limit</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Autoignition Point</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Explosion Data</td>
<td>Material does not have explosive properties.</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not determined.</td>
</tr>
<tr>
<td>pH</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.85 (15.6 °C)</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>7.04 Lb/gal, 0.84 Kg/L</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Percent Solid</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Percent Volatile</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Volatile Organic Compound</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Water/Octanol Coefficient</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
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<tr>
<td>Odor Threshold</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Appearance</td>
<td>Dark amber colored liquid.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>613 Centistokes (25 °C)</td>
</tr>
<tr>
<td></td>
<td>162 Centistokes (40 °C)</td>
</tr>
<tr>
<td></td>
<td>9 Centistokes (100 °C)</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Boiling Point Range</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Pour Point Temperature</td>
<td>-45 °C, -49 °F</td>
</tr>
<tr>
<td>Melting / Freezing Point</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>

The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.

10  Stability and Reactivity

Stability
Material is normally stable at room temperature and pressure. See the Handling and Storage Section for further details.

Decomposition Temperature
Not determined.

Incompatibility

Polymerization
Will not occur.

Thermal Decomposition
Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Hydrogen sulfide and alkyl mercaptans and sulfides may also be released.

Conditions to Avoid
Do not expose to excessive heat, ignition sources, or oxidizing materials. High temperatures.

11  Toxicological Information

-- ACUTE EXPOSURE --

Eye Irritation
Not expected to cause eye irritation. Based on data from components or similar materials.

Skin Irritation
Not expected to be a primary skin irritant. Based on data from components or 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.

Respiratory Irritation
If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the
upper respiratory tract. Based on data from similar materials.

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

**Inhalation Toxicity**
No data available to indicate product or components may be a toxic inhalation hazard.

**Oral Toxicity**
The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Material can be aspirated into the lungs during the act of swallowing or vomiting. This could result in pulmonary edema and chemical pneumonitis.

**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.

**Aspiration Hazard**
Not determined.

--- CHRONIC EXPOSURE ---

**Chronic Toxicity**
No data available to indicate product or components present at greater than 1% are chronic health hazards.

**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.

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

**Reproductive Toxicity**
This product contains para-dodecylphenol. Rats given high, repeated daily doses of para-dodecylphenol by oral intubation experienced adverse reproductive effects. The relevance of these effects to humans is uncertain.

**Teratogenicity**
This product contains para-dodecylphenol. Pregnant rats given high, repeated daily doses of para-dodecylphenol by oral intubation gave birth to pups with cleft palate and skeletal malformations. The relevance of these effects to humans is uncertain.

--- ADDITIONAL INFORMATION ---

**Other**
No other health hazards known.

--- ENVIRONMENTAL TOXICITY ---

**Freshwater Fish Toxicity**
Not determined.

**Freshwater Invertebrates Toxicity**
The acute EC50 is 10 - 100 mg/L based on component data. Chronic effects expected at 1 - 10 mg/L based on component data.

**Algal Inhibition**
Not determined.

**Saltwater Fish Toxicity**
Not determined.

**Saltwater Invertebrates Toxicity**
Not determined.

**Bacteria Toxicity**
Not determined.

**Miscellaneous Toxicity**
Not determined.

--- ENVIRONMENTAL FATE ---

**Biodegradation**
At least 25% of the components in this product show moderate biodegradation based on OECD 301-type test data.

**Bioaccumulation**
25% or greater of the components potentially bioconcentrate, based on octanol/water coefficients.

**Soil Mobility**
Not determined.

**Notes**
None known.

--- Disposal Considerations ---

**Disposal Considerations**
All disposal practices must be in accordance with local, regional, national and international regulations. Do not dispose in landfill.

**Contaminated Containers or Packaging**
Empty container retains product residue and can be hazardous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat, flame, sparks, static electricity, or other sources of ignition. Dispose of packaging or containers in accordance with local, regional, national and international regulations.

--- Transport Information ---

**ICAO/IATA I**
Not regulated.

**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 determined.

**DOT NAERG**
Not applicable.

*Review classification requirements before shipping materials at elevated temperatures.*
-- Global Chemical Inventories --

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

Other TSCA Reg.

EU
To obtain information on the REACH compliance status of this product, please visit Lubrizol.com/REACH, or e-mail us at REACH_MSDS_INQUIRIES@Lubrizol.com

Japan
All components are in compliance with the Chemical Substances Control Law of Japan.

Australia
All components are in compliance with chemical notification requirements in Australia.

New Zealand
This product requires notification before sale in New Zealand.

Switzerland
This product requires notification before sale 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 requires notification in China.

Taiwan
May require notification before sale in Taiwan.

Miscellaneous Regulatory Information
Not determined.

-- Other U.S. Federal Regulations --

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

SARA Section 313
From 0.5 to 1.5 percent zinc compounds; contains 0.1% as Zn.

SARA 311 Classifications
| Acute Hazard | No |
| Chronic Hazard | No |
| Fire Hazard | No |
| Reactivity Hazard | No |

-- State Regulations --

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: < 0.01 ppm cadmium < 0.05 ppm Benzene, CAS no. 71-43-2 < 0.05 ppm lead < 0.05 ppm arsenic 6 ppm Sulfur dioxide, CAS no. 7446-09-5 0.002% Toluene, CAS no. 108-88-3

-- Product Registrations --

U.S. Fuel Registration
Not applicable.

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

Miscellaneous Regulatory Information
Not determined.

-- Other / International --

Issuing Department
Product Safety and Compliance Department (440-943-1200)

Created Date
21 December 2011

Preparation/Revision Date
23 August 2013

US NFPA Codes

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
<th>Special</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</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>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
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