Prepared according to Global Harmonized System (GHS) standards.

1 Substance/Product Identification

<table>
<thead>
<tr>
<th>Product Trade Name</th>
<th>FZ1503AX</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS Number</td>
<td>Not applicable for mixtures.</td>
</tr>
<tr>
<td>Synonyms</td>
<td>None.</td>
</tr>
<tr>
<td>Generic Chemical Name</td>
<td>Mixture.</td>
</tr>
<tr>
<td>Recommended Use</td>
<td>Multipurpose.</td>
</tr>
<tr>
<td>Restrictions on use</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Created Date</td>
<td>20 December 2011</td>
</tr>
<tr>
<td>Preparation/Revision Date</td>
<td>22 August 2013</td>
</tr>
<tr>
<td>Transportation Emergency Phone No.</td>
<td>FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)</td>
</tr>
<tr>
<td>MSDS No.</td>
<td>23460517-2221528-4019331-102103</td>
</tr>
</tbody>
</table>

2 Hazards Identification

| Appearance | Dark amber colored liquid. |
| Odor       | Mild |
| Classification | Sensitization - skin category 1B |
| Target Organs | Not determined. |
| Signal Word | Warning. |
| Hazard statement | May cause an allergic skin reaction. May cause long lasting harmful effects to aquatic life. |
| Other Hazards | None identified. |
| Precaution(s) | Avoid breathing dust / fume / gas / mist / vapors / spray. Wear protective gloves. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. |
| 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

<table>
<thead>
<tr>
<th>Hazardous Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comp</strong></td>
</tr>
<tr>
<td>Hydrocarbon polymer</td>
</tr>
<tr>
<td>Borate ester</td>
</tr>
</tbody>
</table>

4 First Aid Measures

<table>
<thead>
<tr>
<th>Eyes</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>Wash with plenty of soap and water. Remove contaminated clothing. If skin irritation or rash occurs: Get medical attention.</td>
</tr>
</tbody>
</table>
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. Immediately call a poison center or doctor if you feel unwell.

**Advice for the protection of first-aid providers**
When providing first aid always protect yourself against exposure to chemicals or blood born diseases by wearing gloves, 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**

**Flash Point**
197 °C, 386.6 °F PMCC (Typical)

**Extinguishing Media**
CO2, dry chemical, foam, water spray, water fog. Water can be used to cool and protect exposed material.

**Unsuitable Extinguishing Media**
Not determined.

**Firefighting Procedures**
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. Spills produce extremely slippery surfaces. Do not release chemically contaminated water into drains, soil or surface water.

**Unusual Fire & Explosion Hazards**
Burning may produce irritating, toxic and obnoxious fumes. Container may rupture in a fire situation. DO NOT USE a solid stream of water. See section 10 for additional information.

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. Ventilate area if spilled in a confined space or other poorly ventilated area. Material on floor may be slippery.

**Environmental precaution and protective procedures.**
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.

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 dust, fume, gas, mist, vapors or spray. Ground and bond containers when transferring material. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. 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. Store separately from incompatible materials. Keep container tightly closed. Containers which are open must be carefully ressealed and kept upright to prevent leakage. 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
Use local exhaust ventilation to control mists or vapors. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.

Personal Protective Equipment
Respiratory Protection
Under normal use conditions, respirator is not usually required. Use disposable dust/mist mask if the recommended exposure limit is exceeded.

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. Wear a chemically protective apron when contact with material may occur. Use chemically protective boots when necessary to avoid contaminating shoes. 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.

### Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point</td>
<td>197 °C, 386.6 °F PMCC (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>7.06 Lb/gal, 0.85 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>
</tr>
<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>138 Centistokes (25 °C)</td>
</tr>
<tr>
<td></td>
<td>70 Centistokes (40 °C)</td>
</tr>
<tr>
<td></td>
<td>12 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>-39 °C, -38 °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.

### Stability and Reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</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 determined.</td>
</tr>
<tr>
<td>Incompatibility</td>
<td>Strong oxidizing agents. Nitrates Peroxides. Chlorates</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. Hydrogen sulfide and alkyl mercaptans and sulfides may also be released.</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>Do not expose to excessive heat, ignition sources, or oxidizing materials.</td>
</tr>
</tbody>
</table>

### 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
May cause skin sensitization. Based on data from components or similar materials.

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

Teratogenicity
No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

Other
No other health hazards known.

-- ENVIRONMENTAL TOXICITY --

Freshwater Fish Toxicity
Not determined.

Freshwater Invertebrates Toxicity
Not determined.

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.

-- ADDITIONAL INFORMATION --

Other
No other health hazards known.

12 Ecological Information

13 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.

14 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.
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.

Canada

All components are in compliance with the Canadian Environmental Protection Act and are present on the Domestic Substances List.

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

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.

SARA 311 Classifications

<table>
<thead>
<tr>
<th>Classification</th>
<th>Acute Hazard</th>
<th>Chronic Hazard</th>
<th>Fire Hazard</th>
<th>Reactivity Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CERCLA Hazardous Substances

None known.

-- State Regulations --

Cal. Prop. 65

This product does not intentionally contain any chemicals known by the State of California to cause cancer and/or birth defects. Moreover, we do not routinely analyze its products for impurities which may be such chemicals.

-- 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 --

Not determined.

16 Other Information

Issuing Department

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

Created Date

20 December 2011

Preparation/Revision Date

22 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>2</td>
<td>1</td>
<td>1</td>
<td>N/E</td>
</tr>
</tbody>
</table>
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