SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Lubricity Extreme (AKA: LX4)

Company: Lubrication Specialties, Inc.
Address: 3975 Morrow Meadows Drive
          Mount Gilead, Ohio 43338, U.S.
Telephone: 1-800-341-6516
Telefax: 415-946-3554

Recommended use of the chemical and restrictions on use

Recommended use: Add to any diesel or gasoline fuel, including E-85. Do not ingest.

Prepared by: Product Safety Department
Phone number: 419-947-2647

HAZARDS IDENTIFICATION

Hazard classification


Health Hazards

Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2A

GHS Label element

Hazard Symbol

Signal Word Warning
Hazard Statement Causes Skin irritation
Causes serious eye irritation
SAFETY DATA SHEET

LX4 Lubricity Extreme

Version 1.1  Revision Date 09/16/2019  Print Date 09/16/2019

Precautionary statement  N/A

Prevention
Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

Response
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Specific treatment (see this label). Take off contaminated clothing and wash before reuse.

Storage
Store in a closed container.

Disposal
Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification
None.

3  COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Identifier CAS No</th>
<th>Wt%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tall Oil Fatty Acid</td>
<td>61790-12-3</td>
<td>55-75%*</td>
</tr>
<tr>
<td>Trade Secret</td>
<td>Trade Secret</td>
<td>25-45%*</td>
</tr>
</tbody>
</table>

*The exact percentage (concentration) and identity composition has been withheld as a trade secret

4  FIRST AID MEASURES

If inhaled
If breathed in, move person into fresh air. If breathing is difficult, give oxygen. If not breathing, perform artificial respiration and contact physician immediately.

In case of skin contact
Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. Wash shoes and clothing separately before reuse.

In case of eye contact
Immediately flush eye(s) with plenty of water for at least 15 minutes and see a doctor.

If swallowed
Rinse mouth. Do not induce vomiting unless directed to so so by medical personnel. Never give liquid to an unconscious person. Get medical attention.
**SAFETY DATA SHEET**

**LX4 Lubricity Extreme**

Version 1.1  Revision Date 09/16/2019  Print Date 09/16/2019

---

### 5  FIRE FIGHTING MEASURES

- **Flash point**: 184—189 °C (PMCC)
- **Explosive limits**: Not determined
- **Autoignition point**: Not determined
- **Suitable extinguishing media**: Dry chemical, carbon dioxide and/or foam.
- **Unsuitable extinguishing media**: No data available
- **Specific hazards arising from the chemical**: Combustible liquid. At elevated temperatures, vapors can form an ignitable or explosive mixture with air. Can form explosive mixtures at temperatures at or above the flash point. Vapors can flow along surfaces to distant ignition sources and flash back. Static discharges can cause ignition or explosion when container is not bonded. Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure buildup which could result in container rupture or explosion
- **Specific extinguishing methods**: No data available
- **Special protective equipment for fire-fighters**: In the event of fire, wear self-contained breathing apparatus pressure-demand MSHA/NIOSH (approved or equivalent) and full protective gear. Avoid breathing smoke and vapor.

---

### 6  ACCIDENTAL RELEASE MEASURES

- **Protective Precautions, Protective Equipment and Emergency Procedures**: Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep personnel removed and upwind of spill. Eliminate all ignition sources. Keep unnecessary and unprotected personnel from entering.
- **Environmental Precautions: Steps to be taken in case material is released or spilled**
  - **Initial Containment**: Approach release from upwind. Eliminate all sources of ignition – heat, sparks, flame, electricity, and impact. Contain spilled material with dikes or absorbents. Do not allow material to enter soil, surface water, or sewer system. Stop the source of the leak, if safe to do so.
  - **Large Spill**: Contain spilled material. Vacuum or sweep up material and place in a disposal container. Absorb residue with inert material (e.g., dry sand or earth,) then place in a chemical waste container. Do not flush to sewer. Use explosion-proof equipment during clean-up.
  - **Small Spill**: Contain spilled material. Absorb with inert material and place in disposal container. Spills are extremely slippery. Clean up immediately.
  - **Miscellaneous**: Note that combustible vapors may form an ignitable mixture with air. Vapors may travel considerable distances from spill and flash back, if ignited. Report spills to local authorities and/or the U.S. coast Guard’s National Response Center at (800) 424-8802 as appropriate or required.
SAFETY DATA SHEET
LX4 Lubricity Extreme

SECTION 7. HANDLING AND STORAGE

Advice on safe handling: Ground and bond containers when transferring material. Container must be kept tightly closed. Avoid contact with skin and eyes. Avoid breathing vapors or spray mists. Keep away from food and drinking water.

Conditions for safe storage: Store in original container. Keep container tightly closed in a dry and well-ventilated place. Eliminate all sources of ignition.

Materials to avoid: No special restrictions on storage with other products.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:
Observe exposure limits for Oil Mist (NOC):
ACGIH: TWA: 5 mg/m³ Respirable; STEL 10mg/m³ Respirable
OSHA: TWA: 5 mg/m³ Respirable.
NIOSH REL: TWA 10mg/m³ Respirable

Engineering Controls: Provide local exhaust and general ventilation systems to maintain airborne concentrations below OSHA, ACGIH, and manufacturer recommended exposure limits. Local exhaust ventilation is recommended.

Personal Protection:
Eye protection: Safety glasses. Wear chemical goggles and face shield if splashing.
Respiratory protection: No personal respiratory protective equipment normally required.
Hand protection: For prolonged or repeated contact use protective gloves.
Skin and body protection: Wear impervious clothing

Additional Exposure Remarks: Eye wash fountains and emergency showers are recommended. Launder contaminated clothing before reuse. Use good industrial hygiene practices in handling this material.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, yellow liquid
Odor: Fatty Acid odor
Odor Threshold: No data available
pH: Not determined
Melting Point/Freezing Point: Not determined
Boiling point: > 200 °C (> 392 °F)
Flash point: 184-189 °C (363-372 °F) (PMCC)
Autoignition Point: Not determined
Flammability (Solid/Gas): Not determined
SAFETY DATA SHEET

LX4 Lubricity Extreme

Version 1.1
Revision Date 09/16/2019
Print Date 09/16/2019

Upper/Lower Flammability or Explosive limits: Not determined
Evaporation Rate: Not determined
Vapor Pressure: Not determined
Vapor Density: Not determined
Relative density: 0.896
Solubility(ies): Not determined
Partition coefficient: n-octanol/water: Not determined
Thermal decomposition: Not determined
Viscosity @ 40°F: 20.2

10 STABILITY AND REACTIVITY

Chemical stability: Not determined
Possibility of hazardous reactions: Not determined
Conditions to avoid: Sources of ignition, heat
Incompatible materials: Oxidizing material. Avoid prolonged contact with porous materials.
Hazardous decomposition products: Products of Combustion: These products are carbon oxides (CO, CO2) nitrogen oxides (NO, NO2)

11 TOXICOLOGICAL INFORMATION

Toxicity to Humans: No data available
Chronic Toxicity Data: No data available
Acute toxicity

Tall Oil Fatty Acid
Acute Dermal LD50 Albino rabbit: >2000 mg/kg 14 days, at this dose no death occurred.
Acute Oral LD50 Albino Sprague-Dawley rat: >10000 mg/kg 14 days, at this dose no death occurred.

Trade Secret
Acute Oral: Not classified for acute toxicity based on available data.
Acute Dermal: ATEmix: 3000 mg/kg

Primary irritant effect: No data available
Reproductive toxicity: No data available
Germ Cell mutagenicity: No data available
Carcinogenicity: No data available
Reproductive toxicity: No data available
STOT-single exposure : No data available
STOT-repeated exposure : No data available

ECOLOGICAL INFORMATION

Ecotoxicity

Tall oil Fatty Acids
EC50 Bacteria (Pseudomonas putida): > 10000 mg/L 16hr
ECL50 Green algae (Selenastrum capricornutum): > 1000 mg/L 72 hr Growth rate; OECD 201
EL50 Water flea (Daphnia magna): > 1000 mg/L 48 hr OECD 202
LL50 Zebra danio (Danio rerio): > 10000 mg/L 96hr

Trade Secret:
LC50 Fathead minnow (Pimephales promelas): > 1000 mg/L Mortality 1hr
LC50 Fathead minnow (Pimephales promelas): > 285 mg/L Mortality 24hr
LC50 Fathead minnow (Pimephales promelas): > 252 mg/L Mortality 48hr
LC50 Fathead minnow (Pimephales promelas): > 205 mg/L Mortality 72hr
LC50 Fathead minnow (Pimephales promelas): > 205 mg/L Mortality 96hr

Chronic hazards to Aquatic Environment : No data available
Persistence and Degradability : No data available
Bioaccumulative Potential : No data available
Mobility in Soil : No data available
PBT/VPvB Assessment : No data available
Other Adverse Effects : No data available
Additional ecological information : Information given is based on data on the ingredients and the ecotoxicology of similar products.

DISPOSAL CONSIDERATIONS

Disposal methods
Waste disposal method : Dispose of in accordance with local regulations. Collect and dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

Contaminated packaging : Empty remaining contents. Empty containers should be taken to an approved waste handling site for recycling or disposal.

TRANSPORT INFORMATION

Not regulated for US domestic ground transportation.
US federal regulations
Use as a minimal feed is prohibited. This product is not known to be a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All known components are on the U.S. EPA TSCA Inventory List.

CERCLA Hazardous Substances – Not applicable

Reportable Quantity: None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard – No
Pressure Hazard – No
Reactivity Hazard - No

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3) - None present or none present in regulated quantities.

California Prop 65
No ingredient regulated by Prop 65 present

Inventory Status:
The ingredients of this product are reported in the following inventories:

- TSCA On or in compliance
- EU EINECS On the inventory, or in compliance with the inventory

NFPA:
Flammability
Health 1
Special hazard.

HMIS II:
HEALTH 1
FLAMMABILITY 1
Reactivity 0

0 = not significant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme, * = Chronic

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.