SAFETY DATA SHEET

Revision Date 04-Feb-2015

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier: THRIVE™ ECO Hydraulic Fluid ISO 15 Renewable/Biodegradable Lubricants
Code: 509
Synonyms: Proprietary
Trade Names: Not applicable
Chemical Family: Hydraulic Fluid

Relevant identified uses of the substance or mixture and uses advised against: Not for human or animal consumption

Note: The toxicological properties of this mixture have not been fully characterized; this SDS will be revisited as more data become available.

Details of the supplier of the safety data sheet
Manufacturer Address: U.S. Lubricants, A Division of U.S. Venture, Inc.
425 Better Way
Appleton, WI 54915

Emergency telephone number
Company Phone Number: 800-490-4900
24 Hour Emergency Phone Number: 800-688-4005 DTCG84-01-A-900043

2. HAZARDS IDENTIFICATION

US Signal Word: Danger
US Hazard overview: Use in compliance with TSCA Regulation 40 CFR 720.36. The sample label and this safety data sheet contain the required health and safety information under 40 CFR 720.36.
OSHA Label Text: Danger
May be fatal if swallowed and enters airways
If swallowed: Immediately call a poison control center or a doctor.
Do NOT induce vomiting
Store locked up
Dispose of contents/container in accordance with local/national/international regulations.

GHS classification of the substance or mixture

CLP/GHS Hazard pictograms: 

CLP/GHS Signal word: Danger
CLP/GHS Hazard statements: H304 - May be fatal if swallowed and enters airways.

CLP/GHS Precautionary statements:
P301+P310: IF SWALLOWED: Immediately call a Poison Center or doctor/physician. P331 - Do NOT induce vomiting. P405 - Store locked up. P501 - Dispose of contents/container to location in accordance with local/regional/national/international regulations.

Other hazards: No information identified.

Note: The toxicological and ecological properties of this mixture have not been fully characterized. See Section 16 for full text of EU and GHS classifications. The CLP/GHS classifications are based on Regulation (EC) 1272/2008.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS #</th>
<th>EC#/REACH Registration #</th>
<th>Percent</th>
<th>Classification according to 67/548/EEC</th>
<th>Classification according to Regulation EC 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkenes, C10-16-, mixed with (6E)-7,11-dimethyl-3-methylene-1,6,10-dodecatriene, dimers, tetraters and trimers, hydrogenated</td>
<td>1472010-43-7</td>
<td>01-2120031429-59-0000</td>
<td>35-45%</td>
<td>Xn: R 65</td>
<td>H304</td>
</tr>
<tr>
<td>Dec-1-ene, dimers, hydrogenated</td>
<td>68649-11-6</td>
<td>N/A</td>
<td>40-50%</td>
<td>Xn: R 65</td>
<td>H304, H332</td>
</tr>
<tr>
<td>Ester</td>
<td>N/A</td>
<td>N/A</td>
<td>4-8%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Proprietary additives</td>
<td>N/A</td>
<td>N/A</td>
<td>5-10%</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

In the US: Use in compliance with TSCA Regulation 40 CFR 720.36. The sample label and this safety data sheet contain the required health and safety information under 40 CFR 720.36. In the EU: REACH Registration pending. Importers may not import more than 100 ton/year of any of the chemicals substances in this product until REACH registration is complete. The toxicological and ecological properties of this mixture have not been fully characterized.

Note: The toxicological and ecological properties of this mixture have not been fully characterized.

4. FIRST AID MEASURES

Description of necessary first aid measures
Immediate Medical Attention Needed: Yes

Eye contact: If easy to do, remove contact lenses, if worn. Immediately flush eyes with copious quantities of water for at least 15 minutes. If irritation occurs or persists, notify medical personnel and supervisor.

Inhalation: Immediately move exposed subject to fresh air. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Immediately notify medical personnel and supervisor.

Skin contact: Wash exposed area with soap and water and remove contaminated clothing/shoes.
If irritation occurs or persists, notify medical personnel and supervisor.

Protection of first aid responders

Most important symptoms and effects, both acute and delayed

Indication of immediate medical attention and special treatment needed, if necessary

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

Unsuitable extinguishing media

Specific hazards arising from the substance or mixture

Flammability/Explosivity

Advice for firefighters

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Environmental precautions

Methods and material for containment and cleaning up

Reference to other sections

If swallowed, call a physician immediately. Do not induce vomiting unless directed by medical personnel. Do not give anything to drink unless directed by medical personnel. Never give anything by mouth to an unconscious person. Notify medical personnel and supervisor.

See Section 8 for Exposure Controls/Personal Protection recommendations.

Treat symptomatically and supportively. If accidental exposure occurs to an individual who is also taking one or more concomitant medications, consult the respective package or prescribing information for potential drug interactions.

Use water spray (fog), foam, dry powder, or carbon dioxide, as appropriate for surrounding fire and materials.

None known.

No information identified. May emit toxic fumes of carbon monoxide and carbon dioxide.

No explosivity or flammability data identified. High airborne concentrations of finely divided organic particles can potentially explode if ignited.

Wear full protective clothing and a self-contained breathing apparatus with a full face piece operated in the pressure demand or other positive pressure mode. Decontaminate all equipment after use.

If product is released or spilled, take proper precautions to minimize exposure by using appropriate personal protective equipment (see Section 8). Area should be adequately ventilated.

Do not empty into drains. Avoid release to the environment.

For small spills (such as in a laboratory), soak up material with absorbent, e.g., damp paper towel, and wash spill area thoroughly with soap and water. For large spills in manufacturing, use an industrial vacuum cleaner equipped with a high efficiency particulate (HEPA) filter if available. Alternatively if in solid or dried form, do not raise dust. Surround spill or powder with absorbents and place a damp cloth or towel over the area to minimize powder from entering the air. Add excess liquid to allow for the material to enter solution. Capture remaining liquid onto spill absorbents. Place spill materials into a leak-proof container suitable for disposal. Decontaminate area a second time. Dispose of material in a manner that is compliant with federal, state and local laws.

See sections 8 and 13 for more information.
7. HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with eyes, skin and other mucous membranes. Wash thoroughly after handling. Use personal protective equipment. Avoid breathing vapor. Do not eat, drink or smoke while handling this product. Avoid prolonged or repeated exposure. Provide sufficient air exchange and/or exhaust in workrooms. Take precautionary measures against static discharges. Use normal preventative fire protection measures.

Conditions for safe storage including any incompatibilities: Keep container tightly closed. Keep in a cool and well-ventilated area away from any ignition source. To maintain product quality, do not store in heat or direct sunlight. No information identified.

Specific end use(s):

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters/Occupational Exposure Limit Values

<table>
<thead>
<tr>
<th>Compound</th>
<th>Issuer</th>
<th>Type</th>
<th>OEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkenes, C10-16 -, mixed with (6E)-7,11-dimethyl-3-methylene-1,6,10-dodecatriene, dimers, tetramers and trimers, hydrogenated</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dec-1-ene, dimers, hydrogenated</td>
<td>TWA</td>
<td>Aerosols</td>
<td>1 mg/mm³</td>
</tr>
<tr>
<td>Ester</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Proprietary additives</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Exposure/Engineering controls: Selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Use local exhaust and/or enclosure at mist/aerosol/spray-generating points. High-energy operations such as spraying should be done within an approved emission control or containment system.

Respiratory protection: Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. An approved and properly fitted air-purifying respirator with HEPA filters should provide ancillary protection based on the known or foreseeable limitations of existing engineering controls.

Hand protection: Wear impervious gloves if skin contact is possible.

Skin protection: Wear appropriate lab coat or other protective overgarment if skin contact is likely. Base the choice of skin protection on the job activity, potential for skin contact and solvents and reagents in use.

Eye/face protection: Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.

Environmental Exposure Controls: Avoid release to the environment and operate within closed systems wherever practicable. Air and liquid emissions should be directed to appropriate pollution control devices. In case
of spill, do not release to drains. Implement appropriate and effective emergency response procedures to prevent release or spread of contamination and to prevent inadvertent contact by personnel.

Other protective measures: Wash hands in the event of contact with this substance, especially before eating, drinking or smoking.

9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**
- Physical state: Liquid.
- Color: Colorless to pale-yellow
- Odor: Not available.
- Odor threshold: Not available.
- pH: Not available.
- Melting point/freezing point: Not available.
- Initial boiling point and boiling range: 350 °C (initial) - 500 °C (final)
- Flash point: Open cup: 157°C (428°F) [Cleveland.]
- Evaporation rate: Not available.
- Flammability (solid, gas): Not available.
- Lower and upper explosive (flammable) limits: Not available.
- Vapor pressure: Not available.
- Vapor density: Not available.
- Relative density: 0.82 g/mL @15 °C
- Water Solubility: Not available.
- Partition coefficient: n-octanol/water: Not available.
- Auto-ignition temperature: Not available.
- Decomposition temperature: Not available.
- Viscosity: Kinematic: 14.6 mm²/s at 40°C; 5.0 mm²/s at 100°C
- Explosive properties: No information identified
- Oxidizing properties: No information identified

Other information
- Molecular weight: Proprietary
- Molecular formula: Proprietary

10. STABILITY AND REACTIVITY

Reactivity: No information identified.
Chemical stability: No information identified.
Possibility of hazardous reactions: Not expected to occur.
Conditions to avoid: No information identified.
Incompatible materials: No information identified.
Hazardous decomposition products: No information identified.
11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Route of entry: May be absorbed by inhalation, skin contact and ingestion

Acute toxicity

<table>
<thead>
<tr>
<th>Compound</th>
<th>Type</th>
<th>Route</th>
<th>Speices</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkenes, C10-16 -, mixed with (6E)-7,11-dimethyl-3-methylene-1,6,10-dodecatriene, dimers,</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>tetramers and trimers, hydrogenated Dec-1-ene, dimers, hydrogenated Dec-1-ene, dimers,</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>hydrogenated Ester</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Proprietary additives</td>
<td>-</td>
<td>-</td>
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</tbody>
</table>

Irritation/Corrosion
This class of compounds is not irritating to eyes.

Sensitization
This class of compounds is not associated with skin sensitization effects.

STOT-single exposure
No studies identified.

STOT-repeated exposure/Repeat-dosetoxicity
Repeated dose studies with olefins (alkenes) using inhalation, dermal, and oral routes of exposure have been associated with low toxicity in rats with No-Observable-Adverse-Effect-Levels > 100 mg/kg/day in most cases.

Reproductive toxicity
Based on evidence from reproductive toxicity screening in rats with C15-C40 internal/linear branched olefins, along with findings of no biologically significant effects on male or female reproductive organs in repeated dose toxicity studies, this class of compounds is not expected to cause reproductive toxicity.

Developmental toxicity
Based on evidence from developmental toxicity screening in rats with C15-C40 internal/linear branched olefins, along with findings of no biologically significant effects on male or female reproductive organs in repeated dose toxicity studies, this class of compounds is not expected to cause developmental toxicity.

Genotoxicity
Based on the weight of evidence from studies with alpha and internal olefins, this class of compounds is not considered to be genotoxic.

Carcinogenicity
No studies identified. This mixture is not listed by NTP, IARC, ACGIH or OSHA as a carcinogen.

Aspiration hazard
If this substance is accidentally ingested it may cause serious toxicity and lung damage.

**Human health data**
See "Section 2 - Other Hazards"

**Additional Information**
Mixture not full tested

### 12. ECOLOGICAL INFORMATION

**Toxicity**

<table>
<thead>
<tr>
<th>Compound</th>
<th>Type</th>
<th>Species</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkenes, C10-16 -, mixed with (6E)-7,11-dimethyl-3-methylene-1,6,10-dodecatriene, dimers, tetramers and trimers, hydrogenated Dec-1-ene, dimers, hydrogenated Dec-1-ene, dimers, hydrogenated Ester</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Proprietary additives</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Additional toxicity information**

- Testing with water accommodated fractions of C15-C40 internal branched and linear olefins showed no aquatic toxicity in acute tests with fish, invertebrates, and algae.
- No data available.
- No data available.
- No data available.
- No data available.
- The environmental characteristics of this mixture have not been fully investigated. Releases to the environment should be avoided.

### 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

- Used product should be disposed of according to local, state, and federal regulations. Do not send down the drain or flush down the toilet. All wastes containing the material should be properly labeled. Dispose of wastes in accordance to prescribed federal, state, and local guidelines, e.g., appropriately permitted chemical waste incinerator. Rinse waters resulting from spill cleanups should be discharged in an environmentally safe manner, e.g., appropriately permitted municipal or on-site wastewater treatment facility.

### 14. TRANSPORT INFORMATION

**Transport**

- Based on the available data, this mixture is not regulated as a hazardous material/dangerous good under EU ADR/RID, US DOT, Canada TDG, IATA, or
UN number: None assigned.
UN proper shipping name: None assigned.
Transport hazard classes and packing group: None assigned.
Environmental hazards: Based on the available data, this product/mixture is not regulated as an environmental hazard or a marine pollutant.
Special precautions for users: Mixture not fully tested.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

### 15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>Safety, health and environmental regulations/legislation specific for the substance or mixture</th>
<th>This SDS complies with the requirements under US, EU and GHS (EU CLP - Regulation EC No 1272/2008) guidelines.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical safety assessment</td>
<td>Not conducted</td>
</tr>
<tr>
<td>OSHA Hazardous</td>
<td>Mixture not fully tested. Not hazardous by comparison to similar chemicals within this class.</td>
</tr>
<tr>
<td>WHMIS classification</td>
<td>This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by those regulations.</td>
</tr>
<tr>
<td>TSCA status</td>
<td>Use in compliance with 40 CFR 720.36. This sample label and the accompanying safety data sheet contain the required health and safety information under 40 CFR 720.36.</td>
</tr>
<tr>
<td>EU REACH Status</td>
<td>REACH Registration pending. Importers may not import more than 100 ton/year of any of the chemicals substances in this product until REACH registration is complete.</td>
</tr>
<tr>
<td>SARA section 313</td>
<td>Not listed</td>
</tr>
<tr>
<td>California proposition 65</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

### 16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA Classification</th>
<th>Health Hazard: 1; Fire Hazard: 1; Reactivity Hazard: 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sources of data</td>
<td>Information from published literature and internal company data.</td>
</tr>
<tr>
<td>History</td>
<td>Date of issue mm/dd/yyyy: 02/04/2015</td>
</tr>
<tr>
<td></td>
<td>Date of previous issue: 01/30/2015</td>
</tr>
<tr>
<td></td>
<td>Prepared by: US Lubricants</td>
</tr>
</tbody>
</table>

**Disclaimer**
The above information is based on data available to us and is believed to be correct. Since the information may be applied under conditions beyond our control and with which we may be unfamiliar, we do not assume any responsibility for the results of its use and all persons receiving it must make their own determination of the effects, properties and protections which pertain to their particular conditions. No representation, warranty, or guarantee, express or implied (including a warranty of fitness or merchantability for a particular purpose), is made with respect to the materials, the accuracy of this information, the results to be obtained from the use thereof, or the hazards connected with the use of the material. Caution should be used in the handling and
use of the material because it is a pharmaceutical product. The above information is offered in good faith and with the belief that it is accurate. As of the date of issuance, we are providing all information relevant to the foreseeable handling of the material. However, in the event of an adverse incident associated with this product, this Safety Data Sheet is not, and is not intended to be, a substitute for consultation with appropriately trained personnel.

End of Safety Data Sheet