SAFETY DATA SHEET

Revision Date  17-July-2018
Version 7

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

GHS product identifier  :  Synthetic EP Industrial Gear Oil ISO-220
Code  :  506
Product type  :  Liquid.

Identified uses
Lubricating oil. Not to be misted.

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  :  800-424-9300  (CHEMTREC 705487)

2. HAZARDS IDENTIFICATION

OSHA/HCS status  :  This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture  :  SKIN SENSITIZATION – Category 1

GHS label elements
Hazard pictograms  :

Signal word
Hazard statements  :  Warning  May cause an allergic skin reaction.

Precautionary statements
Prevention  :  Wear protective gloves, clothing, and eye and face protection. Avoid breathing vapor. Contaminated work clothing should not be allowed out of the workplace.

Response  :  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  :  Not applicable.

Disposal  :  Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified  :  None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/mixture  :  Mixture
Other means of identification: Not available.

CAS number/other identifiers:
CAS number: Not applicable.
Product code: 508

### 4. FIRST AID MEASURES

**Description of necessary first aid measures**

**Eye contact**: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.

**Inhalation**: Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.

**Skin contact**: It is important to remove the substance from the skin immediately. In the event of any sensitization symptoms developing, ensure further exposure is avoided. Remove contamination with soap and water or recognized skin cleansing agent. Get medical attention if symptoms are severe or persist after washing.

**Ingestion**: Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.

**Most important symptoms/effects, acute and delayed**

**Eye contact**: A single exposure may cause the following adverse effects:
- Redness
- Irritation

**Inhalation**: A single exposure may cause the following adverse effects:
- Dryness of mouth and throat.
- Coughing, chest tightness, feeling of chest pressure.
- Overexposure to organic solvents may depress the central nervous system, causing dizziness and intoxication and, at very high concentrations, unconsciousness and death. Congestion of the lungs may occur, producing severe shortness of breath.

**Skin contact**: May cause skin sensitization or allergic reactions in sensitive individuals. A single exposure may cause the following adverse effects:
- Redness
- Irritation

**Ingestion**: May cause sensitization or allergic reactions in sensitive individuals. A single exposure may cause the following adverse effects:
- Irritation.
- Nausea, vomiting. Symptoms following overexposure may include the following:
  - Unconsciousness. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.

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

**Notes to physician**: Treat symptomatically. May cause sensitization or allergic reactions in sensitive individuals.

**Specific treatments**: No specific treatment.

**Protection of first-aiders**: First aid personnel should wear appropriate protective equipment during any rescue. If it is suspected that volatile contaminants are still present around the affected person, first aid
personnel should wear an appropriate respirator or self-contained breathing apparatus. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

See toxicological information (Section 11)

5. FIRE-FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Extinguishing media</th>
<th>Suitable extinguishing media</th>
<th>Unsuitable extinguishing media</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.</td>
<td>Do not use water jet as an extinguisher, as this will spread the fire.</td>
</tr>
</tbody>
</table>

Specific hazards arising from the chemical:
- Containers can burst violently or explode when heated, due to excessive pressure build-up. Contains Hydrocarbons. The product is immiscible with water and will spread on the water surface.

Hazardous thermal decomposition products:

Special protective actions for fire-fighters:
- Avoid breathing fire gases or vapors. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

Special protective equipment for fire-fighters:
- Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter’s clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:
- No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Use protective equipment appropriate for surrounding materials.

For emergency responders:
- If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For nonemergency personnel".

Environmental precautions:
- Immiscible with water. Aquatic toxicity is unlikely to occur. However, large or frequent spills may have hazardous effects on the environment. Absorb spillage with non-combustible, absorbent material. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Spill:
- Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Small Spillages: Absorb spillage with sand or other inert absorbent. Collect and place in suitable waste disposal containers and seal securely. Large Spillages: If leakage cannot be stopped, evacuate area. Flush spilled material into an effluent treatment plant, or proceed as follows. Contain and absorb spillage
with sand, earth or other non-combustible material. Place waste in labeled, sealed containers. Clean contaminated objects and areas thoroughly, observing environmental regulations. The contaminated absorbent may pose the same hazard as the spilled material. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

7. HANDLING AND STORAGE

Precautions for safe handling
Protective measures
Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimize spills. The product contains a sensitizing substance. Persons susceptible to allergic reactions should not handle this product. Keep container tightly sealed when not in use. Avoid the formation of mists. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers. Avoid contact with used product.

Advice on general occupational hygiene
Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

Conditions for safe storage, including any incompatibilities
Store away from incompatible materials (see Section 10). Store in accordance with local regulations. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Utilize retaining walls to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Occupational exposure limits
Under conditions which may generate mists, the following exposure limits are recommended:
Long-term exposure limit (8-hour TWA): ACGIH 5 mg/m³
Short-term exposure limit (15-minute): 10 mg/m³

Appropriate engineering controls
Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimize worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimize exposure.

Environmental exposure controls
Keep container tightly sealed when not in use.

Individual protection measures
Hygiene measures
Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.

Eye/face protection
Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face
protection should comply with OSHA 1910.133. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

**Skin protection**

**Hand protection**: Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

**Body protection**: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection**: Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

**Respiratory protection**: Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Yellow</td>
</tr>
<tr>
<td>Odor</td>
<td>Sulfur</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point / Pour point</td>
<td>-52 to -40°C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Open cup: 236 to 246°C [Cleveland.]</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower and upper explosive (flammable) limits</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.8529 to 0.8676</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/ water</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>11.5 to 35.7 cSt @ 100°C</td>
</tr>
<tr>
<td></td>
<td>71.7 to 324.1 cSt @ 40°C</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

**Reactivity**: See the other subsections of this section for further details.
Chemical stability: Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

Possibility of hazardous reactions: No potentially hazardous reactions known.

Conditions to avoid: There are no known conditions that are likely to result in a hazardous situation.


Hazardous decomposition products: Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

## 11. TOXICOLOGICAL INFORMATION

### Information on toxicological effects

#### Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amines, C12-14-tert-alkyl</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>612 mg/kg</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rat</td>
<td>251 mg/kg</td>
<td>Toxic in contact with skin</td>
</tr>
</tbody>
</table>

Irritation/Corrosion
There is no data available.

Sensitization
May cause skin sensitization or allergic reactions in sensitive individuals.

Carcinogenicity
There is no data available.

**Specific target organ toxicity (single exposure)**
Not classified as a specific target organ toxicant after a single exposure.

**Specific target organ toxicity (repeated exposure)**
Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard
There is no data available.

Information on the likely routes of exposure:
Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

**Eye contact**
A single exposure may cause the following adverse effects:
Redness
Irritation

**Inhalation**
A single exposure may cause the following adverse effects: Dryness of mouth and throat. Coughing, chest tightness, feeling of chest pressure. Overexposure to organic solvents may depress the central nervous system, causing dizziness and intoxication and, at very high concentrations, unconsciousness and death. Congestion of the lungs may occur, producing severe shortness of breath.

**Skin contact**
May cause skin sensitization or allergic reactions in sensitive individuals. A single exposure may cause the following adverse effects:
Redness
Irritation

**Ingestion**
May cause sensitization or allergic reactions in sensitive individuals. A single exposure may cause the following adverse effects: Irritation. Nausea, vomiting. Symptoms following overexposure may include the following: Unconsciousness. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.

Long term exposure
Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.

Potential chronic health effects
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity
Acute toxicity estimates
There is no data available.

12. ECOLOGICAL INFORMATION

Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amines, C12-14-tert-alkyl</td>
<td>Acute LC50 1.3 mg/l</td>
<td>Oncorhynchus mykiss (Rainbow trout)</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 2.5 mg/l</td>
<td>Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 0.44 mg/l</td>
<td>Selenastrum capricornutum</td>
<td>72 hours</td>
</tr>
</tbody>
</table>

Persistence and degradability
There is no data available.

Bioaccumulative potential
There is no data available.

Mobility in soil
Soil/water partition coefficient (Koc): The product is insoluble in water.

Other adverse effects: No known significant effects or critical hazards.

13. DISPOSAL CONSIDERATIONS

Disposal methods: The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.
14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>Not regulated.</td>
<td>Not Regulated</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Additional information</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

AERG: Not applicable.

Special precautions for user:
- Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

15. REGULATORY INFORMATION

U.S. Federal regulations
CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)
The following ingredients are listed or exempt: Ethyl acrylate, Ethylene oxide, Methyloxirane, 1,4-dioxane, Butan-1-ol, and Phosphoric acid.

CAA Accidental Release Prevention
The following ingredients are listed or exempt: Ethylene oxide and Methyloxirane.

OSHA Highly Hazardous Chemicals
The following ingredient is listed or exempt: Ethylene oxide.

SARA Extremely Hazardous Substances EPCRA Reportable Quantities
None of the ingredients are listed or exempt.

SARA 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities
The following ingredients are listed or exempt: Ethylene oxide and Methyloxirane.

SARA 311/312 Hazard Categories
None of the ingredients are listed or exempt.

Sara 313 Emission Reporting
The following ingredients are listed or exempt:

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl acrylate</td>
<td>0.1%</td>
</tr>
<tr>
<td>Ethylene oxide</td>
<td>0.1%</td>
</tr>
<tr>
<td>Methyloxirane</td>
<td>0.1%</td>
</tr>
<tr>
<td>1,4-dioxane</td>
<td>0.1%</td>
</tr>
<tr>
<td>Butan-1-ol</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

U.S. State regulations
Massachusetts: The following ingredients are listed or exempt: Ethyl acrylate, Ethylene oxide, Methyloxirane, 1,4-dioxane, Butan-1-ol, and Phosphoric acid.

Minnesota: The following ingredients are listed or exempt: Ethyl acrylate, Ethylene oxide, Methyloxirane,
1,4-dioxane, Butan-1-ol, and Phosphoric acid.

New Jersey: The following ingredients are listed or exempt: Bis(2-ethylhexyl) hydrogen phosphate, Ethyl acrylate, Ethylene oxide, Methyloxirane, 1,4-dioxane, Butan-1-ol, and Phosphoric acid.

Pennsylvania: The following ingredients are listed or exempt: Ethyl acrylate, Ethylene oxide, Methyloxirane, 1,4-dioxane, Butan-1-ol, and Phosphoric acid.

Rhode Island: The following ingredients are listed or exempt: Ethyl acrylate, Ethylene oxide, Methyloxirane, 1,4-dioxane, Butan-1-ol, and Phosphoric acid.

California Directors List of Hazardous Substances: The following ingredients are listed or exempt: Ethyl acrylate, Ethylene oxide, Methyloxirane, 1,4-dioxane, Butan-1-ol, and Phosphoric acid.

California Prop 65 Carcinogens and Reproductive Toxins: The following ingredients listed are known to the State of California to cause cancer, developmental, or female and male reproductive toxicity: Ethyl acrylate, Ethylene oxide, Methyloxirane, and 1,4-dioxane.

California Air Toxics "Hot Spots" (A-I): The following ingredients are listed or exempt: Ethyl acrylate, Ethylene oxide, Methyloxirane, 1,4-dioxane, Butan-1-ol, and Phosphoric acid.

California Air Toxics "Hot Spots" (A-II): None of the ingredients are listed or exempt.

Inventories Canada - DSL/NDSL: All the ingredients are listed or exempt.
US - TSCA: All the ingredients are listed or exempt.

16. OTHER INFORMATION

History
Date of issue mm/dd/yyyy: 07/17/2018
Date of previous issue: 03/15/2017
Version: 7
Prepared by: US Lubricants

Notice to reader
To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

End of Safety Data Sheet