SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1. Product Identifier
Product Form: Substance

Product Name: Hydrogenated Castor Oil
Synonyms: Hydrogenated Castor Oil, HCO
CAS No.: 8001-78-3

1.2. Intended Use of the Product
Use of the substance/mixture: Thickener in lithium grease, emulsion in personal care applications

1.3. Name, Address, and Telephone of the Responsible Party
Company
Acme-Hardesty Co.
450 Sentry Parkway
Blue Bell, PA 19422
T 866-226-3834  T 215-591-3610
www.acme-hardesty.com

1.4. Emergency Telephone Number
Emergency Number: 800-424-9300
For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture
Classification (GHS-US)
Not classified

2.2. Label Elements
GHS-US Labeling
Signal Word (GHS-US): Warning
Hazard Statements (GHS-US): May form combustible dust concentrations in air.

2.3. Other Hazards
Other Hazards Not Contributing to the Classification: Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

2.4. Unknown Acute Toxicity (GHS-US):
No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Product Identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
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<tbody>
<tr>
<td>Hydrogenated castor oil</td>
<td>(CAS No) 8001-78-3</td>
<td>100</td>
<td>Comb. Dust</td>
</tr>
</tbody>
</table>

3.2. Mixtures
Not applicable

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures
First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid Measures After Inhalation: When symptoms occur: go into open air and ventilate suspected area.
First-aid Measures After Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes.
First-aid Measures After Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

First-aid Measures After Ingestion: Rinse mouth. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/Injuries: Prolonged contact with large amounts of dust may cause mechanical irritation.
Symptoms/Injuries After Inhalation: Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.
Symptoms/Injuries After Skin Contact: Not irritating to skin.
Symptoms/Injuries After Eye Contact: Dust from this product may cause minor eye irritation.
Symptoms/Injuries After Ingestion: May cause nausea, vomiting, and diarrhea.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed
If medical advice is needed, have product container or label at hand.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing Media
Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire. Carbon dioxide, dry chemical, foam, water spray, sand.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture
Fire Hazard: May be combustible at high temperature.
Explosion Hazard: Risk of explosion by shock, friction, fire or other sources of ignition. Risk of explosion if heated under confinement.
Reactivity: Stable at ambient temperature and under normal conditions of use.

5.3. Advice for Firefighters
Firefighting Instructions: Exercise caution when fighting any chemical fire.
Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures
General Measures: Do not allow product to spread into the environment. Avoid generating dust. Can be slippery on hard, smooth walking area.

6.1.1. For Non-emergency Personnel
Protective Equipment: Use appropriate personal protection equipment (PPE).

6.1.2. For Emergency Responders
Protective Equipment: Equip cleanup crew with proper protection.
Emergency Procedures: Ventilate area.

6.2. Environmental Precautions
Prevent entry to sewers and public waters. Avoid release to the environment.

6.3. Methods and Material for Containment and Cleaning Up
For Containment: Avoid generation of dust during clean-up of spills. Use a soft bristle brush or conductive rubber or conductive plastic shovel. Use caution, material is sensitive to initiation from sources such as heat, flame, shock, friction, or sparks. Use only non-sparking tools.
Methods for Cleaning Up: Clear up spills immediately and dispose of waste safely.

6.4. Reference to Other Sections
See heading 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling
Additional Hazards When Processed: Use care during processing to minimize generation of dust.
Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

7.2. Conditions for Safe Storage, Including Any Incompatibilities
Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use.
Storage Temperature: In bulk, store at about 5-10°C above melting point or at ambient temperature.
Hydrogenated Castor Oil
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Storage Area: Temperature higher than necessary degrades quality at rates dependent on time and temperature of exposure.
Special Rules on Packaging: Stainless steel preferred for storage.
Storage Temperature: In bulk, store at about 5-10°C above melting point or at ambient temperature.
Storage Area: Temperature higher than necessary degrades quality at rates dependent on time and temperature of exposure.
Special Rules on Packaging: Stainless steel preferred for storage.

7.3. Specific End Use(s)  Thickener in lithium grease, emulsion in personal care applications

SECTION 8: EXPOSURE CONTROLS/PERSOAL PROTECTION

8.1. Control Parameters
No Occupational Exposure Limits (OELs) have been established for this product or its chemical components.

8.2. Exposure Controls
Appropriate Engineering Controls: Avoid dust production. Ground/bond container and receiving equipment.

Hand Protection: Rubber gloves.
Eye Protection: Chemical goggles or safety glasses.
Respiratory Protection: When manufacturing or handling product in large quantities and dusts or particulates may be generated, maintain airborne concentrations below recommended limits. Workplace risk assessments should be completed before specifying and implementing respirator usage. NIOSH/MSHA approved respirators for protection should be used if respirators are found to be necessary.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties
Physical State: Solid
Appearance: Flakes. White powder.
Odor: Hardened vegetable oil.
Odor Threshold: No data available
pH: No data available
Relative Evaporation Rate (butylacetate=1): No data available
Melting Point: 82 - 87 °C (179.6-188.6°F)
Freezing Point: No data available
Boiling Point: > 300 °C (572°F)
Flash Point: > 310 °C (590°F)
Auto-ignition Temperature: No data available
Decomposition Temperature: No data available
Flammability (solid, gas): No data available
Vapor Pressure: 3.81E-34 Pa at 20 °C.
Relative Vapor Density at 20 ºC: No data available
Relative Density: ~ 99 @ 25 ºC
Specific Gravity: 0.93 g/cm³ @25°C
Solubility: Water: < 0.05 mg/l @20°C
Ether: Soluble
Organic solvent:Soluble

Log Pow: No data available
Log Kow: No data available
Viscosity, Kinematic: No data available
Hydrogenated Castor Oil
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Viscosity, Dynamic: No data available
Explosive Properties: No data available
Oxidizing Properties: No data available
Explosive Limits: Not applicable

9.2. Other Information
No additional information available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity: Stable at ambient temperature and under normal conditions of use
10.2 Chemical Stability: Risk of explosion by shock, friction, fire or other sources of ignition. Risk of explosion if heated under confinement.
10.3 Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
10.4 Conditions to Avoid: Avoid creating or spreading dust. Avoid ignition sources.
10.6 Hazardous Decomposition Products: Carbon oxides (CO, CO2).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information On Toxicological Effects
Acute Toxicity: Not classified

<table>
<thead>
<tr>
<th>Hydrogenated castor oil (8001-78-3)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 Oral Rat</td>
<td>&gt; 10 g/kg</td>
</tr>
</tbody>
</table>

Skin Corrosion/Irritation: Not classified
Serious Eye Damage/Irritation: Not classified
Respiratory or Skin Sensitization: Not classified
Germ Cell Mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): Not classified
Specific Target Organ Toxicity (Repeated Exposure): Not classified
Aspiration Hazard: Not classified
Symptoms/Injuries After Inhalation: Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.
Symptoms/Injuries After Skin Contact: Not irritating to skin.
Symptoms/Injuries After Eye Contact: Dust from this product may cause minor eye irritation.
Symptoms/Injuries After Ingestion: May cause nausea, vomiting, and diarrhea.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Hydrogenated castor oil (8001-78-3)

| LC50 Fish 1 | > 10000 mg/l (Exposure time: 96 h - Species: Brachydanio rerio) |

12.2. Persistence and Degradability
Hydrogenated Castor Oil
Persistence and Degradability: Readily biodegradable in water.

12.3. Bioaccumulative Potential
Hydrogenated Castor Oil
Bioaccumulative Potential: Not established.

12.4. Mobility in Soil
No additional information available

12.5. Other Adverse Effects
No additional information available
SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.

SECTION 14: TRANSPORT INFORMATION

In Accordance With ICAO/IATA/DOT/TDG
14.1. UN Number Not applicable
14.2. UN Proper Shipping Name Not regulated for transport.
14.3. Additional Information
Other information: No supplementary information available.

Transport by Sea Not regulated for transport.
Air Transport Not regulated for transport.

SECTION 15: REGULATORY INFORMATION

15.1 US Federal Regulations
Hydrogenated castor oil (8001-78-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2 US State Regulations
Hydrogenated Castor Oil
State or local regulations The product and/or its components does not appear on any state Right to Know lists.

SECTION 16: OTHER INFORMATION

Revision Date 06/15/2016
Other Information: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

<table>
<thead>
<tr>
<th>Comb. Dust</th>
<th>Combustible Dust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comb. Dust</td>
<td>May form combustible dust concentrations in air</td>
</tr>
</tbody>
</table>

The data herein are based on our current knowledge and believed to be reliable. Acme-Hardesty Co., provides this information without any representation or warranty, expressed or implied, regarding its accuracy or correctness.

Users must make their own determination that handling, storage, use and disposal of the product in the anticipated manner is safe and appropriate. Because these actions of the user are out of our control, and may be beyond our knowledge, we do not assume responsibility and expressly disclaim liability for loss, damage, expense or any other claim arising out of or in any way connected with the handling, storage, use or disposal of the product or container.

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