SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier
   Product Name: Magnesium Stearate
   Synonym(s): Fatty acids, hydrogenated, magnesium salts
   REACH Registration Number: No data available at this time.

1.2 Relevant identified uses of the substance or mixture and uses advised against
   General use: Industrial applications and laboratory use
   Uses advised against: None known

1.3 Details of the supplier and of the safety data sheet
   Manufacturer/Distributor
   Silver Fern Chemical, Inc.
   2226 Queen Anne Avenue North
   Suite C
   Seattle, WA 98109 USA
   1-866-282-3384
   Website - www.silverfernchemical.com; email address - info@silverfernchemical.com

1.4 Emergency telephone number: INFO-TRAC +1-800-535-5053; Outside USA & Canada +1-352-323-3500

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture
   Product definition: Substance
   Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation EC No. 1272/2008
   Not a dangerous substance according to OSHA or to European Union Legislation

2.2 Label Elements
   Not classified as dangerous according to GHS

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
   May form combustible dust concentrations in air

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>% by Weight</th>
<th>Ingredient</th>
<th>CAS Number</th>
<th>EC Number</th>
<th>Index Number</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;92.5</td>
<td>Fatty acids, C16-18, Magnesium Salts</td>
<td>557-04-0/91031-63-9</td>
<td>209-151-9/292-967-2</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>&lt;2.0</td>
<td>Palmitic/Stearic Acid Mixture</td>
<td>67701-03-5</td>
<td>266-928-5</td>
<td>-----------</td>
<td>-----------</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence, require reporting in this section.

3.2 Mixtures
   Not applicable

SECTION 4 - FIRST AID MEASURES

4.1 Description of first aid measures
   Inhalation: If exposure to product mist causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. Loosen tight fitting clothing such as a collar, tie, belt or waistband. If symptoms persist, seek medical attention.
   Eyes: Immediately flush eyes with large amounts of water for 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses, if present and easy to do, after the first 2 minutes and continue rinsing. If irritation persists seek medical attention, preferably from an ophthalmologist.
   Skin: Flush skin with water while removing contaminated clothing. Wash affected area with soap and water followed by thorough rinsing. Wash contaminated clothing and shoes thoroughly before reuse. If irritation persists, seek medical attention.
**SECTION 5 - FIRE FIGHTING MEASURES**

5.1 Extinguishable media

_Suitable methods of extinction:_ Use extinguishing media suitable for surrounding material.

_Qunsuitable methods of extinction:_ None known

5.2 Special hazards arising from the substance or mixture

_Closed containers may explode due to the buildup of pressure when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention._

_Explosion hazards:_ May form combustible dust concentrations in air.

5.3 Advice for firefighters

_Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion when exposed to extreme heat. If possible, water contaminated by this material should be contained from being discharged to any waterway, sewer or drain to prevent environmental contamination._

**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

6.1 Personal precautions, protective equipment and emergency procedures

_Evacuate non-essential personnel. Wear appropriate protective clothing designated in Section 8.2. Avoid dust generation and accumulation. Do not inhale dust. Remove all sources of ignition. No smoking. Ventilate the area. Clean up spills immediately._

6.2 Environmental precautions

_Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways._

6.3 Methods and materials for containment and cleaning up

_Cover drains and contain spill. Avoid dust generation during cleanup. Collect material and place into an approved container for proper disposal. Observe possible material restrictions (Sections 7.2 and 10.5). Dispose of in accordance with federal, state and local regulations._

6.4 Reference to other sections

_See Section 13 for additional waste treatment information._

**SECTION 7 - HANDLING AND STORAGE**

7.1 Precautions for safe handling

_Wear all appropriate personal protective equipment specified in Section 8.2. Do not get in eyes or on skin or clothing. Do not breathe dust. No smoking. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator. Wash contaminated clothing and shoes thoroughly before reuse._

_Advice on protection against fire and explosion:_ Avoid dust generation and accumulation. May form combustible dust concentrations in air.

7.2 Conditions for safe storage, including any incompatibilities

_Store in dry, cool, well-ventilated areas away from incompatible materials (see Section 10.5), food and drink. Transfer only to approved containers containers having correct labeling. Keep container tightly closed. Protect containers against physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent spillage. Containers may be hazardous when empty as they contain product residues. Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Do not take internally. Keep out of reach of children._

7.3 Specific end uses

_Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated._

**SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

8.1 Control parameters

_Occupational exposure limits:_

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Ingredient</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>NIOSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>557-04-0/</td>
<td>Fatty acids, C16-18, magnesium salts</td>
<td>15 mg/m³, total dust; 5 mg/m³, respirable fraction</td>
<td>10 mg/m³ (stearates) 10 mg/m³</td>
<td>10 mg/m³, total dust; 5 mg/m³, respirable fraction</td>
</tr>
<tr>
<td>91031-63-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8.2 Exposure controls

Engineering measures: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable.

Individual protection measures: Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

Hygiene measures: Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking, smoking or using the lavatory.

Eye/face protection: Wear safety glasses with unperforated side shields or protective splash goggles during use.

Hand Protection: Wear gloves recommended by glove supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be greater than the intended use period.

Skin protection: Wear protective clothing. Wear protective boots if the situation requires.

Respiratory Protection: Always use an approved dust mask when dusts are generated. Where risk assessment shows air-purifying respirators are appropriate use a full-faced respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

Environmental exposure controls: Do not empty into drains.

PPE must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Fine, soft white powder or granular solid</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild, fatty</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>591.25 g/mol (Magnesium Stearate)</td>
</tr>
<tr>
<td>Chemical Formula</td>
<td>C₃₆H₇₀MgO₄ (Magnesium Stearate)</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing/Melting Point, Range</td>
<td>130 - 150 °C (266 - 302 °F)</td>
</tr>
<tr>
<td>Initial Boiling Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Non-flammable, combustible dust</td>
</tr>
<tr>
<td>Flash Point</td>
<td>&gt;177 °C (&gt;350.6 °F) COC</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>&gt;371 °C (&gt;699.8 °F)</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower Explosive Limit (LEL)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper Explosive Limit (UEL)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>1.1 g/cc</td>
</tr>
<tr>
<td>Relative Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Partition Coefficient: n-octanol/water</td>
<td>log Pow = 14.34</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Volatiles by Volume @ 21 °C</td>
<td>0%</td>
</tr>
</tbody>
</table>

9.2 Other data

No data available

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity

May form combustible dust clouds in air.

10.2 Chemical stability

This product is stable under recommended storage conditions, handling and use.

10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur.

10.4 Conditions to avoid

High temperatures and contact with incompatible materials.
SECTION 11 - TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Oral Toxicity
LD50, rat: >10 g/kg

Acute inhalation toxicity
No data available

Acute dermal toxicity
No data available

Skin irritation/corrosion
May cause skin irritation

Eye irritation/corrosion
May cause eye irritation

Sensitization
No data available

Genotoxicity in vitro
No data available

Mutagenicity
No data available

Specific organ toxicity - single exposure
No data available

Specific organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

11.2 Further information
No component of this product present at levels greater than or equal to the 0.1% threshold (de minimis) is identified as a probable, possible, potential or confirmed carcinogen by ACGIH, IARC, NTP or OSHA. No data is available regarding the mutagenicity or teratogenicity of this product, nor is there any available data that indicates that it causes adverse developmental or fertility effects.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
This material is expected to be biodegradable.

12.3 Bioaccumulation potential
This material does not bioaccumulate.

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
No data available

12.6 Other adverse effects
Additional ecological information
Do not allow material to run into surface waters, wastewater or soil.
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

RCRA P-Series: No listing
RCRA U-Series: No listing
Note: Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

NOT REGULATED FOR TRANSPORT

SECTION 15 - REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for substance or mixture

U. S. Federal Regulations

OSHA Hazard Communication Standard: This material is not classified as highly hazardous in accordance with OSHA 29 CFR 1910.1200.


EPA Federal Insecticide, Fungicide and Rodenticide Act: Magnesium Stearate (CAS #557-04-0) is a registered Pesticide under the FIFRA, 40 CFR Part150.

Toxic Substance Control Act (TSCA) Inventory: This material is listed on the TSCA Inventory. It is not subject to TSCA 12(b) Export Notification.

Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.4(f)(2) and Chemical Code Number

Drug Enforcement Administration (DEA) Lists 1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12(c)) and Code Number

Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals

Superfund Amendments and Reauthorization Act (SARA)

SARA 313 Information: None of the chemicals in this product are subject to reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986.

SARA Section 311/312 Hazard Categories: None known

SARA 302/304 Extremely Hazardous Substance: None of the chemicals in this product are subject to reporting requirements of these sections of Title III of SARA.

SARA 302/304 Emergency Planning & Notification: None of the chemicals in this product are subject to reporting requirements of these sections of Title III of SARA.

Clean Air Act (CAA)

This product does not contain any substances that listed as Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b).

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

Clean Water Act (CWA)

This product does not contain any substances that listed as Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b).

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

This product contains no chemical(s) known to the State of California to cause cancer, birth defects or other reproductive harm.

Other U.S. State Inventories

None of the chemicals in this product are listed on any State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists.

Canada

WHMIS Hazard Symbol and Classification: No data available

Canadian National Pollutant Release Inventory (NPRI): None of the substances in this product are listed on the NPRI.

European Economic Community

WGK, Germany (Water danger/protection): nwg (non-hazardous to waters)

Global Chemical Inventory Lists

<table>
<thead>
<tr>
<th>Country</th>
<th>Inventory Name</th>
<th>Inventory Listing*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada:</td>
<td>Domestic Substance List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada:</td>
<td>Non-Domestic Substance List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>Europe:</td>
<td>Inventory of New and Existing Chemicals (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States:</td>
<td>Toxic Substance Control Act (TSCA)</td>
<td>Yes</td>
</tr>
<tr>
<td>Australia:</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Yes - All components of this product are in compliance with the inventory requirements administered by the governing country.

No - One or more components of this product are not on the inventory or are exempt from listing.

Effective Date: 08 June 2017
Supercedes: 23 March 2015

Safety Data Sheet
Magnesium Stearate
**15.2 Chemical safety assessment**

For this product a chemical safety assessment was not carried out.

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**SECTION 16 - OTHER INFORMATION**

**Hazardous Material Information System (HMIS)**

- **HMIS Hazard Rating Legend**
  - 0 = Minimal
  - 1 = Slight
  - 2 = Moderate
  - 3 = Serious
  - 4 = Severe
  - * = Chronic Health Hazard

**National Fire Protection Association (NFPA)**

- **Flammability**
  - 0 = Insignificant
  - 1 = Slight
  - 2 = Moderate
  - 3 = High
  - 4 = Extreme

**Abbreviation Key**

- ACGIH: American Conference of Governmental Industrial Hygienists
- ADR: Accord Dangereux Routier (European regulations concerning the international transport of dangerous goods by road)
- CAS: Chemical Abstract Services
- CFR: Code of Federal Regulations
- DOT: Department of Transportation
- EPA: Environmental Protection Agency
- ERG: Emergency Response Guide Book
- FDA: Food and Drug Administration
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
- HCS: Hazard Communication Standard
- IARIC: International Agency for Research on Cancer
- IATA: International Air Transport Association
- ICAO: International Civil Aviation Organization
- IDLH: Immediately Dangerous to Life and Health
- IMDG: International Maritime Dangerous Goods
- IMO: International Maritime Organization
- mppcf: Millions of Particles Per Cubic Foot
- NA: North America
- NIOSH: National Institute for Occupational Safety
- NTP: National Toxicology Program
- OSHA: Occupational Safety and Health Administration
- PBT: Persistent, Bioaccumulating and Toxic
- PEL: Permissible exposure limit
- PMCC: Pensky-Martens Closed Cup
- ppm: Parts Per Million
- RCRA: Resource Conservation and Recovery Act
- RID: Dangerous Goods by Rail
- RQ: Reportable Quantity
- TCC/Tag: Tagliabue Closed Cup
- TLV: Threshold Limit Value
- TSCA: Toxic Substance Control Act
- TWA: Time-weighted Average
- UN: United Nations
- VOC: Volatile Organic Compounds
- vPvB: Very Persistent and Very Bioaccumulating
- WHMIS: Workplace Hazardous Materials Information System
DISCLAIMER OF RESPONSIBILITY

The information on this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume damage or expense arising out of or in any way responsibility and expressly disclaim liability for loss, connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable.

Revision Date: 08 June 2017