SAFETY DATA SHEET
(according to (EC) 1907/2006)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier Magnesium Ricinoleate
Synonyms: Not applicable

1.2. Relevant identified uses of the substance or mixture and uses advised against
Not applicable

1.3. Details of the supplier of the safety data sheet
Manufacturer Information: Vertellus LLC
201 North Illinois Street, Suite 1800, Indianapolis, IN 46204
Non-Emergency Phone Number: 336-292-1781
E-Mail Address: msds@vertellus.com

1.4. Emergency telephone number
Vertellus: 336-292-1781
CHEMTREC (USA): (800) 424-9300
(collect calls accepted); (Int'l): (703) 527-3887
(collect calls accepted; 011 prefix not needed)

SECTION 2: Hazards identification

HMIS Rating

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>REACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

2.1. Classification of the substance or mixture
(According to Regulation (EC) No 1272/2008)
Not classified as hazardous under this directive.

Signal Word:
Not required.

Hazard Precautions:
Not classified as hazardous under this directive.

2.2. Label elements
Prevention Precautions:
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Note: These precautionary statements are not prescribed by directive 1272/2008 as this product is not classified as hazardous under this directive. Wash hands thoroughly after handling with soap and water. Wear protective gloves, protective clothing, eye protection and face protection. If swallowed, in eyes, on skin or inhaled call a poison center or doctor/physician if you feel unwell. If inhaled, remove victim to fresh air and keep at rest in a comfortable position for breathing. Take off contaminated clothing before reuse. Store in a well-ventilated place. Keep container tightly closed.

First Aid Precautions:
Not required.

Storage Precautions:
Not required.

Disposal Precautions:
Not required.

Single Exposure Target Organs:
Not applicable

Repeated Exposure Target Organs:
Not applicable

(According to Directive 67/548/EEC)
Symbol: Not classified as hazardous under this directive.
Risk Phrases: Not classified as hazardous under this directive.
Safety Phrases: Not classified as hazardous under this directive.

2.3. Other hazards

Signs and Symptoms of Potential Overexposure: O3EM: OVR1500 Prolonged or repeated skin contact may cause skin irritation in some individuals. Contact with eyes may cause slight irritation. Not likely to be toxic by ingestion. Single dose oral toxicity is low.

Primary Route(s) of Exposure: Skin contact and absorption, eye contact, ingestion, inhalation.

Medical Conditions Aggravated by Exposure: No data found

SECTION 3: Composition/information on ingredients

3.1. Substances or 3.2. Mixtures

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>Concentration (%)</th>
<th>EINECS / ELINCS</th>
<th>EU Symbol</th>
<th>Risk Phrases</th>
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<tbody>
<tr>
<td>Magnesium Ricinoleate</td>
<td>22677-47-0</td>
<td>100.000000</td>
<td>245-153-6</td>
<td>None</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

NOTE: See Section 8 of this MSDS for exposure limit data for these ingredients. See Section 15 of this MSDS for trade secret information (where applicable). See Section 16 of this MSDS for the full text of the R-phrases above.

SECTION 4: First aid measures
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4.1. Description of first aid measures

Skin Contact: Wash thoroughly after skin contact. Wash with soap and water. Get medical attention if irritation develops or persists.

Eye Contact: Immediately flush the eyes with plenty of water for at least 15 minutes. Call a physician. Rinse eyes immediately with large amounts of water for at least 15 minutes, occasionally lifting the eyelids. GET MEDICAL ATTENTION.

Inhalation: Remove from exposure. If not breathing, give artificial respiration and call a physician. No specific treatment is necessary since this material is not likely to be hazardous by inhalation. If exposed to excessive levels remove to fresh air and get medical attention if cough or other symptoms develop.

Ingestion: If swallowed, do not induce vomiting. Get prompt medical attention. If swallowed, do NOT induce vomiting. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Do not give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

Acute: O3EM_OVR1500 Prolonged or repeated skin contact may cause skin irritation in some individuals. Contact with eyes may cause slight irritation. Not likely to be toxic by ingestion. Single dose oral toxicity is low.

Delayed Effects: None known.

4.3. Indication of any immediate medical attention and special treatment needed

Thermal Exposure: Not applicable.

Note to Physician: No additional first aid information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Appropriate Extinguishing Media: Carbon dioxide Dry chemical Alcohol foam Water spray

5.2. Special hazards arising from the substance or mixture

Hazardous Products of Combustion: None Known

Potential for Dust Explosion: Not available

Special Flammability Hazards: Not applicable.

5.3. Advice for firefighters

Basic Fire Fighting Guidance: Can burn in fire releasing toxic vapors. As in any fire, wear pressure-demand self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear. Using water can cause frothing with increasing fire intensity. Lubricin N-1 has a flashpoint of 370°F. Avoid temperatures over 350°F. Evacuate area and fight fire from a safe distance.

Flammability Classification (OSHA): Not applicable.
SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuation Procedures: Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Special Instructions: Remove all contaminated clothing to prevent further absorption. Decontaminate affected personnel using the first aid procedures in Section 4. Leather shoes that have been saturated must be discarded.

6.2. Environmental precautions

Prevent releases to soils, drains, sewers, and waterways.

6.3. Methods and material for containment and cleaning up

Containment Techniques and Clean-up Procedures: Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Remove all ignition sources. Ventilate the area of spill or leak. Wear protective equipment during clean-up. For small spills, use suitable absorbent material and collect for later disposal. For large spills, the area may require digging to contain the spill. Material can then be collected (eg., suction) for later disposal. After collection of material, flush area with water. Dispose of the material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable federal, state or local laws. Contain spilled liquid with sand clay. DO NOT use combustible materials such as sawdust. LARGE SPILLS: Shut off leak if safe to do so. Retain all contaminated water for treatment.

Special Reporting Requirements: Not applicable.

6.4. Reference to other sections

Refer to section 8 for information on selecting personal protective equipment. Refer to section 13 for information on spilled product, absorbent and clean up material disposal instructions.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for Unique Hazards: Not applicable.

Practices to Minimize Risk: Wear appropriate protective equipment when performing maintenance on contaminated equipment. Wash hands thoroughly before eating or smoking after handling this material.

Special Handling Equipment: Not applicable.

7.2. Conditions for safe storage, including any incompatibilities

Storage Precautions & Recommendations: This product should be stored at ambient temperature in a dry, well-ventilated location. Keep container closed when not in use.
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Dangerous Incompatibility Reactions: Can react vigorously with oxidizing materials.

Incompatibilities with Materials of Construction: none known

7.3. Specific end use(s)

If a chemical safety assessment has been completed an exposure scenario is attached as an annex to this Safety Data Sheet. Refer to this annex for the specific exposure scenario control parameters for uses identified in subsection 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits (United States): OSHA PEL: Not available. ACGIH TLV: Not available.

8.2. Exposure controls

Also see the annex to this SDS (if applicable) for specific exposure scenario controls.

Personal Protective Equipment: Wear safety glasses with side shields and a Face shield Wear impervious gloves (i.e., latex rubber), boots, work uniform and safety glasses Work uniforms or impervious clothing and boots. Use of protective coveralls and long sleeves is recommended.


Ventilation: All operations should be conducted in well-ventilated conditions. Local exhaust ventilation should be provided. Use process enclosures to control the level of dust in the air. Local exhaust ventilation is recommended when generating excessive levels of vapors from handling or thermal processing. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. Conduct air monitoring to determine if airborne concentrations exceed an applicable exposure limit. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, the work atmosphere may be deficient of oxygen, or any other circumstances where air purifying respirators may not provide adequate protection, for example, when air purifying respirators have a short breakthrough time. A respiratory protection program that meets OSHA’s 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator’s use.

Other Engineering Controls: All appropriate engineering controls should be used to minimize exposure potential. Use exhaust ventilation to keep airborne concentrations below exposure limits.

Other Engineering Controls: Not applicable.

Additive or Synergistic Effects: None known.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance, State & Odor (ambient temperature): Tan paste Not applicable
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Molecular Formula: Not applicable
Molecular Weight: Not applicable
Vapor Pressure: Not applicable
Evaporation Rate: < 1 (Butyl Acetate = 1)
Specific Gravity or Density: Not applicable
Vapor Density (air = 1): Not applicable
Boiling Point: Not applicable
Freezing / Melting Point: Not applicable 144 °F
Solubility in Water: Partial
Octanol / Water Coefficient: Not applicable
pH: Not applicable
Odor Threshold: Not applicable
Viscosity: 77 F
Autoignition Temperature: Not applicable
Flash Point and Method: Not available
Flammable Limits: Not applicable (LEL) – Not applicable (UEL)

9.2. Other information
Not applicable.

SECTION 10: Stability and reactivity

10.1. Reactivity
Not classified as dangerously reactive.

10.2. Chemical stability
Stable

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur

10.4. Conditions to avoid
Strong acids, strong alkalies, and oxidizing agents.

10.5. Incompatible materials
Can react vigorously with oxidizing materials.

10.6. Hazardous decomposition products
Products of incomplete combustion may include CO, CO2, NOx, and dense smoke. Hydrogen

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute Oral LD50: Not available.
Acute Dermal LD50: Not available.
Acute Inhalation LC50: Not available.
Skin Irritation: No data available.
Skin Sensitization: No data available.
Eye Irritation: No data available.
Target Organs: No data available.
Carcinogenicity: No data available.
Teratogenicity: No data available.
Reproduction: No data available.
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Neurotoxicity: No data available.
Mutagenicity: No data available.
Additional Toxicity Information: 11TOX_NOTES1

SECTION 12: Ecological information

12.1. Toxicity
12.2. Persistence and degradability
12.3. Bioaccumulative potential
12.4. Mobility in soil
12.5. Results of PBT and vPvB assessment
12.6. Other adverse effects

SECTION 13: Disposal considerations

13.1. Waste treatment methods
US EPA Waste Number: Dispose of by incineration following Federal, State, Local, or Provincial regulations.
Waste Classification: Dispose of by incineration following Federal, State, Local, or Provincial regulations.
NOTE: Generator is responsible for proper waste characterization. State (USA) hazardous waste regulations may differ substantially from federal (USA) regulations.
Waste Disposal: Dispose of this material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable international, national, regional, state or local laws. Do NOT dump into any sewers, on the ground, or into any body of water. For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used. Note that disposal regulations may also apply to empty containers and equipment rinsates.

SECTION 14: Transport information

14.1. UN number
14.2. UN proper shipping name
14.3. Transport hazard class(es)
14.4. Packing group
14.5. Environmental hazards
14.6. Special precautions for user
NA Emergency Guidebook Numbers: Not applicable
IMDG EMS: Not applicable
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14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
OSHA Hazards: Irritant. Not applicable.

WHMIS Classification: Class D, Division 2, Subdivision B: Irritant.

Chemical Inventory Lists: Status
TSCA: 15TSCA010
EINECS: 245-153-6
Canada(DSL/NDSL): DSL
Japan: (2)-1333
Korea: Not Listed
Australia: Present
New Zealand: Present
China: Present
Philippines: Present
Switzerland: Not Listed

New Zealand GHS Classification: Non classificato da questo paese.
Japan GHS Classification: Non classificato da questo paese.
Korea (MOL) GHS Classification: Non classificato da questo paese.
Australia GHS Classification: Non classificato da questo paese.
Taiwan GHS Classification: Non classificato da questo paese.
Indonesia GHS Classification: Non classificato da questo paese.
SARA 313: No

15.2. Chemical safety assessment
Not applicable.

SECTION 16: Other information

Full text of R phrases in Section 3: Not applicable
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Legend of abbreviations:
ACGIH = American Conference on Governmental Industrial Hygienists.
CAS = Chemical Abstracts Service.
DSL/NDSL = Domestic Substances List/Non-Domestic Substances List.
EC = European Community.
EEC = European Economic Community.
EINECS = European Inventory of Existing Commercial chemical Substances.
ELINCS = European List of Notified Chemical Substances.
EU = European Union.
GHS = Globally Harmonized System.
LC = Lethal concentration.
LD = Lethal dose.
MOL = Ministry of Labor.
NEMA = National Emergency Management Agency.
NIOSH = National Institute of Occupational Safety and Health.
NTP = National Toxicological Program.
OSHA = Occupational Safety and Health Administration.
PEL = Permissible exposure limit.
RQ = Reportable quantity.
TLV = Threshold limit value.
WHMIS = Workplace Hazardous Materials Information System.

Precautionary Statement: Please note that the information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.

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Revision Details: Revised in all sections to GHS format.