SAFETY DATA SHEET

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

1.1. Product identifier  PARICIN* 1

Synonyms: Methyl 12-hydroxyoctadecanoate; 12-Hydroxystearic acid, methyl ester; Octadecanoic acid, 12-hydroxy-, methyl ester

Chemical Abstracts Registry No: 141-23-1

REACH Registration Number: 01-2120770066-55-0000

1.2. Relevant identified uses of the substance or mixture and uses advised against

Lubricant/processing aid in rubber manufacture

1.3. Details of the supplier of the safety data sheet

Vertellus LLC
201 North Illinois Street, Suite 1800
Indianapolis, Indiana 46204 USA
1-336-292-1781

Only Representative for EU REACH Registration:
Vertellus Specialties UK Ltd.
Seal Sands Road, Seal Sands
Middlesbrough, TS2 1UB
England
Phone: +44 1642 546 546

e-mail Address: sds@vertellus.com

1.4. Emergency telephone number

Vertellus: 1-336-292-1781
CHEMTREC (USA): +1-800-424-9300 (collect calls accepted)
CHEMTREC (International): +1-703-527-3887 (collect calls accepted)
NRCC (China): +86 25 85477110

SECTION 2: Hazards identification


Not Classified as Hazardous

2.2. Label elements

Signal Word: Not required.

Hazard Precautions: Not Classified as Hazardous

Prevention Precautionary Statements: Note: These precautionary statements are not prescribed by Regulation EC 1272/2008 as this product is not classified as hazardous under this regulation. 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 Precautionary Statements: Not required.

*Trademark owned by or licensed to the Vertellus group of companies, registered in the United States or elsewhere.
SAFETY DATA SHEET

2.3. Other hazards

Other Hazards: Not applicable.

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 (weight %)</th>
<th>EC Number</th>
<th>CLP Inventory/ Annex VI</th>
<th>EU CLP Classification (1272/2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl 12-hydroxyoctadecanoate</td>
<td>141-23-1</td>
<td>&gt; 80%</td>
<td>205-471-8</td>
<td>Not listed.</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

NOTE: See Section 8 for exposure limit data for these ingredients. See Section 15 for trade secret information (where applicable).

SECTION 4: First aid measures

4.1. Description of first aid measures

Skin Contact: Quickly and gently, blot or brush away excess chemical. Get medical attention if irritation develops or persists.

Eye Contact: Flush with copious amounts of water for at least 15 minutes. If irritation persists seek medical attention. Get medical attention if irritation or other symptoms exist.

Inhalation: Remove to fresh air and get medical attention if cough or other symptoms develop.

Ingestion: If the material is swallowed, get immediate medical attention or advice -- Do not induce vomiting. Do not give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Acute: Not expected to cause significant eye or skin irritation or sensitization. Not expected to be acutely toxic.

Delayed Effects: None known.

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

Note to Physician: No specific indications. Treatment should be based on the judgment of the physician in response to the reactions of the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

Hazardous Products of Combustion: As with other organic materials, combustion will produce carbon monoxide and carbon dioxide.

Potential for Dust Explosion: not available

Special Flammability Hazards: Material may burn, but does not ignite readily. Avoid high temperature. Can burn in fire releasing toxic vapors.

*Trademark owned by or licensed to the Vertellus group of companies, registered in the United States or elsewhere.*
SAFETY DATA SHEET

5.3. Advice for firefighters

Basic Fire Fighting Guidance:
Wear self-contained breathing apparatus and protective clothing. Normal firefighting procedures may be used. As for any fire, evacuate the area and fight the fire from a safe distance.

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: See Section 8 for personal protective equipment recommendations. 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

Vacuum, sweep or scoop material into a chemical waste container. After collection of material, flush area with water. Scrub area with detergent and water. Contain spilled liquid with sand or vermiculite and place in chemical waste container. Prevent runoff from entering drains, sewers, and streams.

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. Do not eat, drink or smoke in work areas. Prevent contact with incompatible materials. Avoid spills and keep away from drains. Handle in a manner to prevent generation of aerosols, vapors or dust clouds.

Special Handling Equipment: Avoid generating dusts and mists.

7.2. Conditions for safe storage, including any incompatibilities

Storage Precautions & Recommendations: Keep container closed when not in use. Store in a cool, dry area, away from heat, flame and other ignition sources.

Dangerous Incompatibility Reactions: Incompatible with strong oxidizing agents

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.
SAFETY DATA SHEET

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limit  Not applicable.

<table>
<thead>
<tr>
<th>Derived No Effect Levels (DNELs) – Workers:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Route</strong></td>
</tr>
<tr>
<td>Long-term - systemic effects (inhalation)</td>
</tr>
<tr>
<td>Acute - systemic effects (inhalation)</td>
</tr>
<tr>
<td>Long-term - systemic effects (dermal)</td>
</tr>
<tr>
<td>Acute - systemic effects (dermal)</td>
</tr>
<tr>
<td>Acute and long-term - local effects (dermal, inhalation)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Derived No Effect Levels (DNELs) – General Population:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Route</strong></td>
</tr>
<tr>
<td>Long-term - systemic effects (oral)</td>
</tr>
<tr>
<td>Long-term - systemic effects (dermal)</td>
</tr>
<tr>
<td>Long-term - systemic effects (inhalation)</td>
</tr>
<tr>
<td>Acute - systemic effects (oral, dermal, inhalation)</td>
</tr>
<tr>
<td>Acute and long-term - local effects (dermal, inhalation)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Predicted No Effect Concentrations (PNECs):</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Route</strong></td>
</tr>
<tr>
<td>PNEC aqua (freshwater)</td>
</tr>
<tr>
<td>PNEC aqua (marine water)</td>
</tr>
<tr>
<td>PNEC aqua (STP)</td>
</tr>
<tr>
<td>PNEC sediment (freshwater)</td>
</tr>
<tr>
<td>PNEC sediment (marine water)</td>
</tr>
<tr>
<td>PNEC soil</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

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

Other Engineering Controls: All operations should be conducted in well-ventilated conditions. Local exhaust ventilation should be provided. If user operations generate dust, fume, or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protective Equipment: Wear impervious gloves (i.e., latex rubber), boots, work uniform and safety glasses

Respirator Caution: Observe OSHA regulations for respirator use (29 CFR 1910.134) or equivalent guidance. Air-purifying respirators must not be used in oxygen-deficient atmospheres.

Thermal Hazards: Not applicable.

Environmental Exposure Controls: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
SAFETY DATA SHEET

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance, State &amp; Odor</td>
<td>Waxy, white opaque solid.</td>
</tr>
<tr>
<td>(ambient temperature):</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>&lt; 0.001 mm Hg</td>
</tr>
<tr>
<td>Specific Gravity or Density:</td>
<td>1.02 g/cm³</td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>(estimated) 382 °C</td>
</tr>
<tr>
<td>Solubility in Water:</td>
<td>Insoluble</td>
</tr>
<tr>
<td>pH:</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flash Point and Method:</td>
<td>415°F (213°C) PMCC</td>
</tr>
<tr>
<td>Flammability (solid, gas):</td>
<td>No data available.</td>
</tr>
<tr>
<td>Explosive Properties:</td>
<td>Not explosive.</td>
</tr>
</tbody>
</table>

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

Not expected to occur.

10.4. Conditions to avoid

Avoid generation of dust. Avoid heat and contact with incompatible materials

10.5. Incompatible materials

Incompatible with strong oxidizing agents

10.6. Hazardous decomposition products

Products of incomplete combustion may include carbon monoxide, carbon dioxide, nitrogen oxides, and dense smoke.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Oral LD₅₀</td>
<td>&gt; 2000 mg/kg (rat)</td>
<td>Read across from methyl dodecanoate</td>
</tr>
<tr>
<td>Acute Dermal LD₅₀</td>
<td>No data available.</td>
<td></td>
</tr>
<tr>
<td>Acute Inhalation LC₅₀</td>
<td>No data available.</td>
<td></td>
</tr>
<tr>
<td>Skin Irritation:</td>
<td>Essentially non-irritating to skin.</td>
<td></td>
</tr>
</tbody>
</table>

*Trademark owned by or licensed to the Vertellus group of companies, registered in the United States or elsewhere.*
SAFETY DATA SHEET

Eye Irritation: Non-irritating to eyes.
Skin Sensitization: Not a sensitizer
Mutagenicity: No evidence of mutagenic effects
Reproductive / Developmental Toxicity: No evidence of reproductive effects
Carcinogenicity: This material is not listed by IARC, NTP or OSHA as a carcinogen. No test data is available that indicates this material is a carcinogen.
Target Organs: None known
Aspiration Hazard: Based on physical properties, not likely to be an aspiration hazard.
Primary Route(s) of Exposure: Skin contact and absorption, eye contact, and inhalation. Ingestion is not likely to be a primary route of exposure.
Most important symptoms and effects, both acute and delayed: Not expected to cause significant eye or skin irritation or sensitization. Not expected to be acutely toxic. Delayed Effects: None known.
Additive or Synergistic effects: None known.

SECTION 12: Ecological information

12.1. Toxicity
96-hr LC50 Fish = 1700 mg/L
NOEC (48-HR) Daphnia magna ≥ 100 mg/L
NOEC (72-hr) Pseudokirchneriella subcapitata (algae) ≥ 100 mg/L
Read across from methyl myristate

12.2. Persistence and degradability
Readily biodegradable.

12.3. Bioaccumulative potential
No data available

12.4. Mobility in soil
No data available

12.5. Results of PBT and vPvB assessment
This product is not identified as containing a PBT / vPvB substance.

12.6. Other adverse effects
No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
US EPA Waste Number: Non-Hazardous
Waste Classification: (per US regulations) The waste may be classified as "special" or hazardous per State regulations.
Waste Disposal: NOTE: Generator is responsible for proper waste characterization. State hazardous waste regulations may differ substantially from federal regulations. Dispose of this material responsibly, and in accordance with standard practice for disposal of potentially hazardous materials as required by applicable international, national, regional, state or local laws, and environmental protection duty of care principles. Do NOT dump into any sewers, on the ground, or into any body of water. For disposal within the EC, the appropriate classification code according to the European Community List of Wastes should be used.
SAFETY DATA SHEET

Note that disposal regulations may also apply to empty containers and equipment rinsates.

SECTION 14: Transport information

The following information applies to all shipping modes (DOT/IATA/ICAO/IMDG/ADR/RID/ADN), unless otherwise indicated:

14.1. UN number: Not applicable
14.2. UN proper shipping name: Chemicals, n.o.s. (Paricin* 1)
14.3. Transport hazard class(es): Not applicable
14.4. Packing group: Not applicable
14.5. Environmental hazards: Not applicable
14.6. Special precautions for user: Not applicable
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

Chemical Inventory Lists: Status:
USA TSCA: Listed
Canada(DSL/NDSL): DSL
Korea: KE-24293
China: 26763
Taiwan: Listed

German Water Hazard Classification: WGK 1 - low hazard to waters
SARA 313: Not listed.
Other Regulatory Listings: All ingredients are listed on the Inventory of Cosmetic Ingredients (INCI).
This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
This substance is not classified as hazardous according to Regulation (EC) No 1272/2008.

HMIS IV: NFPA:

15.2. Chemical safety assessment
Not applicable.

SECTION 16: Other information

Classification Method: On basis of test data
Legend of Abbreviations:

*Trademark owned by or licensed to the Vertellus group of companies, registered in the United States or elsewhere.
SAFETY DATA SHEET

ACGIH = American Conference on Governmental Industrial Hygienists.
CAS = Chemical Abstracts Service.
DSL/NDSL = Domestic Substances List/Non-Domestic Substances List.
EC = European Community.
EINECS = European Inventory of Existing Commercial Chemical Substances.
ELINCS = European List of Notified Chemical Substances.
EU = European Union.
GHS = Globally Harmonized System.
LD = Lethal Dose.
LC = Lethal Concentration.
NIOSH = National Institute of Occupational Safety and Health.
NTP = National Toxicology Program.
OSHA = Occupational Safety and Health Administration.
PEL = Permissible Exposure Limit.
RQ = Reportable Quantity.
TLV = Threshold Limit Value.
WHMIS = Workplace Hazardous Materials Information System.

Important Note: 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. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. The information contained herein may change without prior notice. THIS SAFETY DATA SHEET SUPERSEDES ALL PREVIOUS EDITIONS.

Revision Date: 30 Oct 2018
Issued by: Regulatory Management Department
Revision Details: Updated with REACH registration information.

Original Date of Issue: 15 October 1990
Email: SDS@Vertellus.com

*Trademark owned by or licensed to the Vertellus group of companies, registered in the United States or elsewhere.