Section 1. Product and Company Identification

Product Name: Rhein
Product ID: R2917
Chemical Name (Synonyms): Rhubarb yellow; Monorhein; Rheic acid; Cassic acid; Parietic acid
Supplier: LKT Laboratories, Inc
545 Phalen Blvd.
St. Paul, MN 55130 USA
Ph: 651-644-8424 Fax: 651-644-8357
www.lktlabs.com - getinfo@lktlabs.com

Emergency Phone #: 1-800-424-9300

Section 2. Hazards Identification

GHS Classification
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

GHS Label elements including precautionary statements

Pictogram: Warning
Signal word: Warning
Hazard and precautionary statements
Hazard statements
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.
Precautionary statements
P261 - Avoid breathing dust, fumes, gas, mist, vapors and spray.
P264 - Wash skin thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves, eye protection and face protection.
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 - Call a POISON CENTER or doctor or a physician if you feel unwell.
P321 - Specific treatment (see supplements first aid instructions on this label).
P332 + P313 - If skin irritation occurs: Get medical advice/attention.
P337 + P313 - If eye irritation persists: Get medical advice/attention.
P362 - Take off contaminated clothing and wash before reuse.
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container to an approved waste disposal plant.

HMIS Classification
Health hazard: 2
Chronic health hazard: *
Flammability: 0
Physical hazard: 0

NFPA Rating
Health hazard: 2
Fire hazard: 0
Reactivity hazard: 0

Potential Health Effects
Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
Skin: May be harmful if absorbed through skin. May cause skin irritation.
Eyes: May cause eye irritation.
Section 3. Composition/Information on Ingredients

Substances

<table>
<thead>
<tr>
<th>Formula</th>
<th>Formula Wt.</th>
<th>CAS No.</th>
<th>EC No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C15H8O6</td>
<td>284.22</td>
<td>478-43-3</td>
<td>207-521-4</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Eye Contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin Contact
Wash off with soap and plenty of water. Consult a physician.

Inhalation
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5. Firefighting Measures

Flash Point
Not available.

Extinguishing Media
Use water spray, alcohol-resistant foam, dry chemical powder or carbon dioxide.

Firefighting Procedures
Wear self-contained breathing apparatus and protective clothing for fire fighting if necessary.

Unusual Fire Hazards
Carbon oxides.

Section 6. Accidental Release Measures

Personal Precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist dust or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental Precautions
Do not let product enter drains.

Methods and materials for containment and cleanup
Avoid raising dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7. Handling and Storage

Handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Storage Conditions
Store in a cool, dry and well-ventilated place in a tightly closed container. Store at +4°C.

Hazardous Decomposition Products
Not available.

Other Remarks
None.
Section 8. Exposure Controls/Personal Protection

**Personal protective equipment**

**EXPOSURE CONTROLS**
Contains no substances with occupational exposure limit values. Hand in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**PERSONAL PROTECTION**
Eye/face protection: Safety glasses with side-shield conforming to EN 166. Use equipment for eye protection tested and approved under appropriate governments standards such as NIOSH (US) or EN 166 (EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection: Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid.</td>
<td>Yellow crystalline powder.</td>
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</table>

<table>
<thead>
<tr>
<th>Boiling Point</th>
<th>Volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Melting Point</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>321°C - 322°C</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Solubility</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practically insoluble in water. Soluble in alkalies and pyridine.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flash Point</th>
<th>Ignition temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lower explosion limit</th>
<th>Autoignition temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
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</table>

<table>
<thead>
<tr>
<th>Upper explosion limit</th>
<th>Vapor pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water solubility</th>
<th>Odor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practically insoluble in water.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Partition coefficient: n-octanol/water</th>
<th>Odor Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relative vapor density</th>
<th>Evaporation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td></td>
</tr>
</tbody>
</table>

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Section 10. Stability and Reactivity

**Stability**

Stable under recommended storage conditions.

**Materials To Avoid**

Keep away from heat, strong oxidizing agents and strong bases.

**Hazardous Decomposition Products**

Not available.
Section 11. Toxicological Information

**Oral LD50**: Mouse > 5,000 mg/kg

**Inhalation LC50**: Not available.

**Dermal LD50**: Not available.

**Other information on acute toxicity**: Not available.

**Skin corrosion/irritation**: Not available.

**Serious eye damage/irritation**: Not available.

**Respiratory or skin sensitization**: Not available.

**Germ cell mutagenicity**: Not available.

**Carcinogenicity**
- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive Toxicity**: Not available.

**Teratogenicity**: Not available.

**Specific organ toxicity single exposure (GHS)**
- Inhalation: May cause respiratory irritation.

**Specific organ toxicity repeated exposure (GHS)**
- Not available.

**Aspiration Hazard**: Not available.

**Synergistic effects**: Not available.

**RTECS**: CA9516000
- To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

**Potential Health Effects**
- Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
- Skin: May be harmful if absorbed through skin. May cause skin irritation.
- Eyes: May cause eye irritation.
- Ingestion: May be harmful if swallowed.

**Section 12. Ecological Information**

**Toxicity**: Not available.

**Mobility in soil**: Not available.

**PBT and vPvB assessment**: PBT/vPvB assessment not available as chemical safety assessment not required/ not
Persistence and degradability: Not available.

Bioaccumulative potential: Not available.

Section 13. Disposal Considerations

Waste Disposal:
Dispose of material according to all federal, state, and local regulations.
Offer material to a licensed professional disposal company to dispose of as unused product.

Section 14. Transport Information

DOT (US): Not dangerous goods.

IATA: Not dangerous goods.

IMDG: Not dangerous goods.

Further Information

Section 15. Regulatory Information

Reach No.

SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Components: Acute health hazard

Massachusetts Right To Know Components: No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components:
9,10-Dihydro-4,5-dihydroxy-9,10-dioxoanthracene-2-carboxylic acid CAS No. 478-43-3 Revision Date

New Jersey Right To Know Components:
9,10-Dihydro-4,5-dihydroxy-9,10-dioxoanthracene-2-carboxylic acid CAS No. 478-43-3 Revision Date

California Prop 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other reproductive harm.

Section 16. Other Information

Other information: The information in this document is believed to be correct but is not necessarily complete. LKT does not guarantee the accuracy of the information. The burden of verifying the information in this document rests solely upon the user.