1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Rhein
Product Number : 30873
Brand : Sigma-Aldrich
Product Use : For laboratory research purposes.
Supplier : Sigma-Aldrich Canada Co.
2149 Winston Park Drive
OAKVILLE ON L6H 6J8
CANADA
Manufacturer : Sigma-Aldrich Corporation
3050 Spruce St.
St. Louis, Missouri 63103
USA
Telephone : +1 9058299500
Fax : +1 9058299292
Emergency Phone # (For both supplier and manufacturer) : +1-703-527-3887 (CHEMTREC)
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

WHMIS Classification
Not controlled. Moderate respiratory irritant
Not a hazardous substance or mixture.

HMIS Classification
Health hazard: 2
Flammability: 0
Physical hazards: 0

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C_{15}H_{8}O_{6}
Molecular weight : 284.22 g/mol

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>9,10-Dihydro-4,5-dihydroxy-9,10-dioxoanthracene-2-carboxylic acid</td>
<td>478-43-3</td>
<td>207-521-4</td>
<td>&lt;=100%</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

General advice
Move out of dangerous area.
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

5. FIREFIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products

Explosion data - sensitivity to mechanical impact
No data available

Explosion data - sensitivity to static discharge
No data available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Avoid dust formation. Avoid breathing vapours, mist or gas.

Environmental precautions
No special environmental precautions required.

Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.


8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand 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.

Eye protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount
of the dangerous substance at the specific workplace.

**Hygiene measures**
General industrial hygiene practice.

**Specific engineering controls**
Use mechanical exhaust or laboratory fume hood to avoid exposure.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

### Appearance
- **Form**: powder
- **Colour**: dark yellow

### Safety data
- **pH**: No data available
- **Melting point/freezing point**: Melting point/range: > 300 °C (> 572 °F)
- **Boiling point**: No data available
- **Flash point**: No data available
- **Ignition temperature**: No data available
- **Auto-ignition temperature**: No data available
- **Lower explosion limit**: No data available
- **Upper explosion limit**: No data available
- **Vapour pressure**: No data available
- **Density**: No data available
- **Water solubility**: No data available
- **Partition coefficient: n-octanol/water**: No data available
- **Relative vapour density**: No data available
- **Odour**: No data available
- **Odour Threshold**: No data available
- **Evaporation rate**: No data available

**10. STABILITY AND REACTIVITY**

**Chemical stability**
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
No data available

**Conditions to avoid**
No data available

**Materials to avoid**
Strong oxidizing agents, Strong bases

**Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available

**11. TOXICOLOGICAL INFORMATION**
Acute toxicity

Oral LD50
LD50 Oral - Mouse - > 5,000 mg/kg

Inhalation LC50
Dermal LD50
No data available

Other information on acute toxicity
No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data 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.

Reproductive toxicity
No data available

Teratogenicity
No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
No data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
No data available

Aspiration hazard
No data available

Potential health effects

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<th>Effect</th>
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<td>Eyes</td>
<td>Causes eye irritation.</td>
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</tbody>
</table>

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
No data available

Additional Information
RTECS: CA9516000

12. ECOLOGICAL INFORMATION

Toxicity
No data available

Persistence and degradability
No data available

**Bioaccumulative potential**
No data available

**Mobility in soil**
No data available

**PBT and vPvB assessment**
No data available

**Other adverse effects**
No data available

### 13. DISPOSAL CONSIDERATIONS

**Product**
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**
Dispose of as unused product.

### 14. TRANSPORT INFORMATION

**DOT (US)**
Not dangerous goods

**IMDG**
Not dangerous goods

**IATA**
Not dangerous goods

### 15. REGULATORY INFORMATION

**WHMIS Classification**

<table>
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This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

### 16. OTHER INFORMATION

**Further information**
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