1. PRODUCT AND COMPANY IDENTIFICATION

Product name: RODINE 31A
Product use: Corrosion inhibitor
IDH number: 593979

Company address: Henkel Canada Corporation
2225 Meadowpine Boulevard
Mississauga, Ontario L5N 7P2

Contact information:
Telephone: 905.814.6511
Emergency Telephone: CANUTEC 613-996-6666
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Physical state: Liquid
Color: Dark brown
Odor: Pungent


DANGER -- CORROSIVE!: CAUSES EYE, SKIN AND RESPIRATORY TRACT BURNS. POSSIBLE CANCER HAZARD.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: Mists, vapors or liquid may cause severe irritation or burns. Excessive inhalation of this material causes headache, dizziness, nausea and incoordination.
Skin contact: Corrosive to the skin. Contact with the skin or mucous membranes may cause severe irritation and burns. This product may cause an allergic skin reaction. A component in this product may be absorbed through the skin in harmful amounts.
Eye contact: This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness.
Ingestion: This product may produce corrosive damage to the gastrointestinal tract if it is swallowed. May cause dizziness, incoordination, headache, nausea, and vomiting.

Existing conditions aggravated by exposure: Eye, skin and respiratory disorders.

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>CAS NUMBER</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyridine, alkyl derivitives</td>
<td>Proprietary</td>
<td>30 - 60</td>
</tr>
<tr>
<td>1,3-Diethyl-2-thiourea</td>
<td>105-55-5</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>7664-93-9</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Alkylphenol ethoxylate</td>
<td>Proprietary</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Inhalation: If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.

Skin contact: Remove contaminated clothing and footwear. For skin contact, flush with large amounts of water. Seek immediate medical attention.
### 5. FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammable/Explosive limits - lower</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammable/Explosive limits - upper</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Extinguishing media</td>
<td>Use media appropriate for surrounding material.</td>
</tr>
<tr>
<td>Special firefighting procedures</td>
<td>Wear full protective clothing. Wear self-contained breathing apparatus.</td>
</tr>
<tr>
<td>Unusual fire or explosion hazards</td>
<td>This product is an aqueous mixture which will not burn. May react with metals to form flammable hydrogen gas.</td>
</tr>
<tr>
<td>Hazardous combustion products</td>
<td>Irritating and toxic gases or fumes may be released during a fire. Upon decomposition, this product emits oxides of sulfur, carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.</td>
</tr>
<tr>
<td>Sensitivity to Mechanical Impact</td>
<td>Not available</td>
</tr>
<tr>
<td>Sensitivity to static discharge</td>
<td>Not available</td>
</tr>
</tbody>
</table>

### 6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

**Environmental precautions:**
Prevent further leakage or spillage if safe to do so. Wear appropriate protective equipment and clothing during clean-up. Eliminate all sources of ignition or flammables that may come into contact with a spill of this material.

**Clean-up methods:**
Absorb spill with inert material. Shovel material into appropriate container for disposal. Dispose of according to Federal, State and local governmental regulations.

### 7. HANDLING AND STORAGE

**Handling:**
Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Keep container closed. For industrial use only. NEVER ADD WATER TO PRODUCT. For dilutions, add product slowly to water while stirring. Use caution; heat may be generated.

**Storage:**
For safe storage, store between 14 °F (-10°C) and 104 °F (40°C) Keep container tightly closed and in a cool, well-ventilated place away from incompatible materials.

For information on product shelf life contact Henkel Canada Customer Service at (905) 814-6511.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.
<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>AIHA WEEL</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyridine, alkyl derivatives</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>1,3-Diethyl-2-thiourea</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>0.2 mg/m3 TWA</td>
<td>1 mg/m3 TWA</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Alkylphenol ethoxylate</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

**Engineering controls:**
Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.

**Respiratory protection:**
If ventilation is not sufficient to effectively prevent buildup of aerosols, mists or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

**Eye/face protection:**
Wear chemical goggles; face shield (if splashing is possible).

**Skin protection:**
Chemical resistant, impermeable gloves. Gloves should be tested to determine suitability for prolonged contact. Use of impervious apron and boots are recommended.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

- **Physical state:** Liquid
- **Color:** Dark brown
- **Odor:** Pungent
- **Odor threshold:** Not available
- **pH:** < 2
- **Vapor pressure:** Not determined
- **Boiling point/range:** > 100 °C (> 212°F)
- **Melting point/ range:** -23 °C (-9.4 °F)
- **Specific gravity:** 1.13 - 1.16 at 60 °F (15.56 °C)
- **Vapor density:** Not determined
- **Flash point:** Not applicable
- **Flammable/Explosive limits - lower:** Not applicable
- **Flammable/Explosive limits - upper:** Not applicable
- **Autoignition temperature:** Not applicable
- **Evaporation rate:** Not determined
- **Solubility in water:** Complete
- **Partition coefficient (n-octanol/water):** Not determined
- **VOC content:** Not applicable
- **Viscosity:** 223 cp

### 10. STABILITY AND REACTIVITY

- **Stability:** Stable at normal conditions.
- **Hazardous reactions:** Will not occur.
- **Hazardous decomposition products:** Upon decomposition, this product emits oxides of sulfur, carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.
- **Incompatible materials:** Keep away from organic, alkaline, and oxidizing materials, metallic powders, chromates, chlorates, nitrates, and carbides.
- **Conditions to avoid:** Store away from incompatible materials.

### 11. TOXICOLOGICAL INFORMATION

- **Toxicologically synergistic products:** Not available
Refer to the following for Irritancy of Product, Sensitization to Product, Carcinogenicity, Reproductive Toxicity, Teratogenicity, and Mutagenicity.

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>NTP Carcinogen</th>
<th>IARC Carcinogen</th>
<th>OSHA Carcinogen (Specifically Regulated)</th>
<th>ACGIH Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyridine, alkyl derivitives</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>1,3-Diethyl-2-thiourea</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>Known carcinogen.</td>
<td>Group 1</td>
<td>No</td>
<td>Group A2</td>
</tr>
<tr>
<td>Alkylphenol ethoxylate</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>LD50s and LC50s</th>
<th>Health Effects/Target Organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyridine, alkyl derivitives</td>
<td>None</td>
<td>No Target Organs</td>
</tr>
<tr>
<td>1,3-Diethyl-2-thiourea</td>
<td>Oral LD50 (RAT) = 316 mg/kg</td>
<td>Irritant, Allergen</td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>Inhalation LC50 (RAT, 1 h) = 347 mg/l</td>
<td>Carcinogen, Corrosive, Irritant, Lung</td>
</tr>
<tr>
<td>Alkylphenol ethoxylate</td>
<td>None</td>
<td>Irritant</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Ecological information: Not available

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

14. TRANSPORT INFORMATION

Canada Transportation of Dangerous Goods - Ground

- Proper shipping name: SULPHURIC ACID solution
- Hazard class or division: 8
- Identification number: UN 2796
- Packing group: II

International Air Transportation (ICAO/IATA)

- Proper shipping name: Sulphuric acid solution
- Hazard class or division: 8
- Identification number: UN 2796
- Packing group: II

Water Transportation (IMO/IMDG)

- Proper shipping name: SULPHURIC ACID solution
- Hazard class or division: 8
- Identification number: UN 2796
- Packing group: II

15. REGULATORY INFORMATION

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: This Material Safety Data Sheet contains changes from the previous version in Section(s): 1, 2, 3, 7, 8, 9, 11, 13 & 15.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR), and the MSDS contains all the information required by the CPR.

Prepared by: John DiCerbo, Regulatory Affairs Specialist

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