### MATERIAL SAFETY DATA SHEET

**CHEMICAL NAME AND SYNONYMS**
- Oxalic Acid

**TRADE NAME AND SYNONYMS**
- Ethanedioic Acid

**CHEMICAL FAMILY**
- Carboxylic Acid

**FORMULA**
- \( \text{HO}_2\text{C=O}_2\text{H}\cdot2\text{H}_2\text{O} \)

### SECTION II—HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>PAINTS, PRESERVATIVES, &amp; SOLVENTS</th>
<th>% TLV (Units)</th>
<th>ALLOYS AND METALLIC COATINGS</th>
<th>% TLV (Units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIGMENTS</td>
<td></td>
<td>BASE METAL</td>
<td></td>
</tr>
<tr>
<td>CATALYST</td>
<td></td>
<td>ALLOYS</td>
<td></td>
</tr>
<tr>
<td>VEHICLE</td>
<td></td>
<td>METALLIC COATINGS</td>
<td></td>
</tr>
<tr>
<td>SOLVENTS</td>
<td></td>
<td>FILLER METAL</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PLUS COATING OR CORE FLUX</td>
<td></td>
</tr>
<tr>
<td>ADDITIVES</td>
<td></td>
<td>OTHERS</td>
<td></td>
</tr>
<tr>
<td>OTHERS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES**

This section does not apply to oxalic acid — single substance.

### SECTION III—PHYSICAL DATA

<table>
<thead>
<tr>
<th>BOILING POINT (°F)</th>
<th>N/A</th>
<th>SPECIFIC GRAVITY (H₂O = 1)</th>
<th>1.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAPOR PRESSURE (mm Hg)</td>
<td>N/A</td>
<td>PERCENT, VOLATILE BY VOLUME (%)</td>
<td>N/A</td>
</tr>
<tr>
<td>VAPOR DENSITY (AIR = 1)</td>
<td>N/A</td>
<td>EVAPORATION RATE (L/L)</td>
<td>N/A</td>
</tr>
<tr>
<td>SOLUBILITY IN WATER</td>
<td>@ 20°C</td>
<td>8.3%</td>
<td>Melting Point</td>
</tr>
<tr>
<td>APPEARANCE AND ODOR</td>
<td>White crystals</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SECTION IV—FIRE AND EXPLOSION HAZARD DATA

**FLASH POINT (Method used)**
- not flammable

**FLAMMABLE LIMITS**
- n/a

**LEL**

**UEL**

**EXTINGUISHING MEDIA**
- Water, dry chemical, "alcohol" foam, CO₂. Water spray to cool fire-exposed containers.

**SPECIAL FIRE FIGHTING PROCEDURES**
- Wear self-contained breathing apparatus, eye goggles or face shield, and protective clothing.

**UNUSUAL FIRE AND EXPLOSION HAZARDS**
- Emits highly toxic fumes.
SECTION V—HEALTH HAZARD DATA

| THRESHOLD LIMIT VALUE | 1 mg/m^3 |
| TXDS: orl-hmn | LDL: 71 mg/kg |

EFFECTS OF OVEREXPOSURE

- Burns on contact. Inhaled: may be fatal. Skin: absorption is rapid, severe

EMERGENCY AND FIRST AID PROCEDURES

- Inhalation: remove to fresh air. Skin: remove contaminated clothing immediately.
- Flush with water. Eyes: flush with water for 15 min. Ingestion: drink milk, milk of magnesia, or lime water; do not induce vomiting. Get medical attention in all cases.

SECTION VI—REACTIVITY DATA

<table>
<thead>
<tr>
<th>STABILITY</th>
<th>UNSTABLE</th>
<th>STABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONDITIONS TO AVOID</td>
<td>Reacts explosively with chlorites and hypochlorites</td>
<td>X</td>
</tr>
</tbody>
</table>

INCOMPATIBILITY (Materials to avoid)

- Alkalis, Silver

HAZARDOUS DECOMPOSITION PRODUCTS

- Highly toxic fumes including CO_x and formic acid

HAZARDOUS POLYMERIZATION

- MAY OCCUR | CONDITIONS TO AVOID | WILL NOT OCCUR | X |

SECTION VII—SPILL OR LEAK PROCEDURES

- STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
  Take up and containerize for proper disposal.

- WASTE DISPOSAL METHOD
  To be performed in compliance with all current local, state, and federal regulations.

SECTION VIII—SPECIAL PROTECTION INFORMATION

- RESPIRATORY PROTECTION (Specify type)
  Wear dust mask or cartridge respirator

- VENTILATION
  LOCAL EXHAUST | X |
  MECHANICAL (General) | X |

- PROTECTIVE GLOVES
  Neoprene or rubber | EYE PROTECTION | Goggles or safety glasses

OTHER PROTECTIVE EQUIPMENT

- Protective clothing including apron and long sleeves.

SECTION IX—SPECIAL PRECAUTIONS

- PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
  Store in a cool, dry, well-ventilated area from area of acute fire hazard. Keep container closed. Store separate from oxidizing materials, outside storage preferred.

- OTHER PRECAUTIONS
  Do not store near food items. Wash gloves before removing; wash hands and face thoroughly after handling. Clean work area thoroughly after use.