MATERIAL SAFETY DATA SHEET

EASTMAN KODAK COMPANY
343 State Street
Rochester, New York 14650

For Emergency Health, Safety, and Environmental Information, call 716-722-5151
For all other purposes, call 800-225-5352, in New York State call 716-458-4014

Date of Revision: 10/20/88
Kodak Accession Number: 900695

PRODUCT INFORMATION

Product Name: Malonic Acid
Synonym(s): Propanedioic Acid
Product Use: Laboratory and research chemical
Formula: C₃ H₄ O₄
CAT No(s): 107 9656; 107 9672; 107 9698; 108 0043; 108 0068; 108 0084;
171 8477; 182 2543
Chem. No(s): 00695
Kodak's Internal Hazard Rating Codes: R: 2  S: 3  F: 1  C: 0

Manufacturer:
Eastman Kodak Company
343 State Street
Rochester, NY 14650
USA

Supplier:
Eastman Kodak Company
343 State Street
Rochester, NY 14650
USA

For Emergency Information: (716) 722-5151

INGREDIENT INFORMATION

Percent  CAS Reg. No.

Malonic Acid  ca. 100  141-82-2

PHYSICAL DATA

Appearance: Crystalline solid
Melting Point: 134 C (273 F)
Vapor Pressure: Negligible
Evaporation Rate (n-butyl acetate = 1): Negligible
Volatile Fraction by Weight: Negligible
Specific Gravity (Water = 1): 1.62
Solubility in Water (by Weight): Appreciable

FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not Applicable
Extinguishing Media: Water spray; Dry chemical; Carbon dioxide
Special Fire Fighting Procedures: Wear self-contained breathing apparatus and protective clothing.
Unusual Fire and Explosion Hazards: This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.

R-0226.100B  86-6956
REACTIVITY DATA

Stability: Stable
Incompatibility: Strong oxidizers
Hazardous Decomposition Products: Combustion will produce carbon dioxide and probably carbon monoxide.
Hazardous Polymerization: Will not occur.

TOXICOLOGICAL PROPERTIES

EXPOSURE LIMITS:
ACGIH Threshold Limit Value (TLV): Not Established
OSHA Permissible Exposure Limit (PEL): Not Established

EXPOSURE EFFECTS:
Inhalation: Dust irritating to respiratory tract.
Skin: Causes burns.
Eye: Causes burns.

TOXICITY DATA:

<table>
<thead>
<tr>
<th>Test</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Oral LD50</td>
<td>Rat</td>
<td>1310 mg/kg</td>
</tr>
<tr>
<td>Skin Absorption LD50</td>
<td>Rabbit</td>
<td>GT 10 g/kg</td>
</tr>
<tr>
<td>Skin Irritation</td>
<td>Rabbit</td>
<td>Strong</td>
</tr>
<tr>
<td>Eye Irritation</td>
<td>Rabbit</td>
<td>Strong</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Rat</td>
<td>GT 8.9 mg/L</td>
</tr>
</tbody>
</table>

Feeding Study: Rats fed diets containing the compound for 28 days consumed approximately 326 mg/kg/day.
Feed Intake: Normal
Weight Gain: Normal
No significant gross lesions were noted.

PREVENTIVE MEASURES

VENTILATION: Use process enclosures, local exhaust ventilation or other engineering controls to reduce dust concentrations to an acceptable level.

RESPIRATORY PROTECTION: If engineering controls are inadequate to control dust concentrations to an acceptable level, a NIOSH approved dust respirator should be worn if needed. If respirators are used, a program should be instituted to assure compliance with OSHA Standard 29CFR 1910.134.

SKIN AND EYE PROTECTION: Protective gloves and clothing should be worn. Safety glasses, goggles, or a face shield should be worn.

SPECIAL STORAGE AND HANDLING PRECAUTIONS: Keep from contact with oxidizing materials.
SPILL, LEAK, AND DISPOSAL PROCEDURES: Sweep up material and package for safe feed to an incinerator. Dispose by incineration or contract with licensed chemical waste disposal agency. Discharge, treatment, or disposal may be subject to federal, state or local laws.

FIRST AID MEASURES

Inhalation: Remove to fresh air. Treat symptomatically. If symptoms are present get medical attention.

Skin: Immediately flush skin with plenty of water for at least 15 minutes and get medical attention if symptoms are present after washing.

Eye: Immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately.

ADDITIONAL INFORMATION

WHMIS STATUS: Controlled Product

TRANSPORTATION: For transportation information regarding this material, please phone the Eastman Kodak Distribution Center nearest you: Rochester, NY (716) 254-1300; Oak Brook, IL (312) 654-5300; Chamblee, GA (404) 455-0123; Dallas, TX (214) 241-1611; Whittier, CA (213) 945-1255; Honolulu, HI (808) 833-1661.

PREPARATION INFORMATION

Health and Environment Laboratories
Eastman Kodak Company
343 State Street
Rochester, NY 14650
USA

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 the 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.

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