MATERIAL SAFETY DATA SHEET

EASTMAN KODAK COMPANY
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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: 03/10/89 Kodak Accession Number: 900690

SECTION I. IDENTIFICATION

- Product Name: Maleic Acid
- Synonym(s): cis-Butenedioic Acid; cis-1,2-Ethylenedicarboxylic Acid
- Formula: C4 H4 O4
- CAT No(s): 107 8922; 107 8930; 107 8948
- Chem. No(s): 00690
- Kodak's Internal Hazard Rating Codes: R: 2 S: 2 F: 1 C: 1-Z

SECTION II. PRODUCT AND COMPONENT HAZARD DATA

COMPONENT(S):	Percent	ACGIH TLV(R)	CAS Reg. No.
Maleic Acid	GT 98	---	110-16-7

SECTION III. PHYSICAL DATA

- Appearance and Odor: White powder; odorless
- Melting Point: 131 C (268 F)
- Decomposes: 135 C (275 F)
- Vapor Pressure: Negligible
- Evaporation Rate (n-butyl acetate = 1): Negligible
- Vapor Density (Air = 1): Not Applicable
- Volatile Fraction by Weight: Negligible
- Specific Gravity (water = 1): 1.6
- Solubility in Water (by Weight): Appreciable

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

- Flash Point: Not Applicable
- Extinguishing Media: Water spray; Dry chemical; CO2; Alcohol foam
- Special Fire Fighting Procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Use water spray to keep fire exposed containers cool.
- Unusual Fire and Explosion Hazards: None

SECTION V. REACTIVITY DATA

- Stability: Stable, however, can decompose above 305 C. Avoid temperatures above 205 C.
- Incompatibility: Strong oxidizers, alkali metals, strong bases
- Hazardous Decomposition Products: As with any other organic material, combustion will produce carbon dioxide and probably carbon monoxide.
- Hazardous Polymerization: May occur upon heating. Store in a cool place.

SECTION VI. TOXICITY AND HEALTH HAZARD DATA

A. EXPOSURE LIMITS: Not established

B. EXPOSURE EFFECTS: Overexposure can cause temporary changes kidney in function that subside with cessation of exposure.

Inhalation: Harmful if inhaled. Dust may cause upper respiratory tract irritation.
Eyes: Causes eye irritation. Aqueous solutions containing as little as 5% maleic acid can cause burns.
Skin: Harmful if absorbed through the skin. Causes irritation.
Ingestion: Harmful if swallowed.

C. FIRST AID:
Inhalation: Remove to fresh air. Treat symptomatically. Get medical attention.
Eyes: Immediately flush eyes with plenty of water and get medical attention.
Skin: Flush skin with plenty of water and wash with a non-alkaline (acid) type of skin cleanser.
Ingestion: If swallowed, induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control cneter immediately.

D. TOXICITY DATA:

Test	Species	Result
Acute Oral LD50	Rat	708 mg/m3
Skin Irritation	Guinea Pig	Moderate irritation
Skin Absorption	Guinea Pig	No evidence of absorption at 1.0 g/kg
Eye Irritation	Rabbit	Strong irritation
Acute Inhalation	Rat	Exposure to 0.72 mg/L for one hour produced generalized inactivity, labored breathing and sedation after 15 minutes of exposure. All animals survived and there were no significant findings on gross examination.

SECTION VII. VENTILATION AND PERSONAL PROTECTION

A. VENTILATION: Good general ventilation should be used. Local exhaust ventilation or an enclosed handling system may be needed to control air contamination to acceptable levels.

B. RESPIRATORY PROTECTION: 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 29 CFR 1910.134.

C. SKIN AND EYE PROTECTION: Protective gloves should be worn. Safety glasses should be worn.

SECTION VIII. SPECIAL STORAGE AND HANDLING PRECAUTIONS

Store in cool, dry place.
Keep from contact with oxidizing materials.
Avoid contact with amines, alkali metals or strong bases.

SECTION IX. SPILL, LEAK, AND DISPOSAL PROCEDURES

Small amount - sweep material onto paper and place in fiber carton.
Large amount - package appropriately for safe feed to an incinerator or dissolve in compatible waste solvents prior to incineration.
Dispose in an approved incinerator or contract with licensed chemical waste disposal agency.
Discharge, treatment, or disposal may be subject to federal, state, or local laws.

SECTION X. ENVIRONMENTAL EFFECTS DATA

This chemical has not been tested for environmental effects.

For transportation information regarding this material, please phone the Eastman Kodak Distribution Center nearest you: Rochester, NY (716) 588-9232; Oak Brook, IL (312) 954-6000; Chamblee, GA (404) 455-0123; Dallas, TX (214) 241-1611; Whittier, CA (213) 693-5222; Honolulu, HI (808) 833-1661.

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