

MATERIAL SAFETY DATA SHEET
EASTMAN KODAK COMPANY

Date of Revision: 04/08/91

Kodak Accession Number: 427810

PRODUCT INFORMATION

Product Name: KODAK Rapid Fixer, Part A
Formula: Aqueous Mixture
Kodak Catalog Number(s): CAT 186 6342 - 52 Gallons; CAT 128 2839 - 30
Gallons; CAT 197 3247 - 5 Gallons; CAT 146 4114 - To Make 5 Gallons; CAT 146
4106 - To Make 1 Gallon
Solution Number: 4896
Kodak Hazard Rating Codes: R: 1 S: 1 F: 0 C: 0

Manufacturer/Supplier:
Eastman Kodak Company
343 State Street
Rochester, New York 14650
USA

For Emergency Information: (716) 722-5151
For other purposes, call the Marketing and Distribution Center in your area.

COMPONENT INFORMATION

	Weight Percent	CAS Number	Accession Number
Water	40-50	7732-18-5	035290
Ammonium thiosulfate	40-45	7783-18-8	909586
Sodium acetate	5-10	127-09-3	900227
Boric acid	1-5	10043-35-3	901064
Acetic acid	1-5	64-19-7	900763

PHYSICAL DATA

Appearance and Odor: Clear light yellow solution; slight sulfur dioxide and acetic acid odor
Boiling Point: GT 100 C (GT 212 F) @ 760 mmHg
Vapor Pressure: ca. 18 mmHg @ 20 C
Evaporation Rate (n-butyl acetate = 1): Not Available
Vapor Density (Air = 1): ca. 0.6
Volatile Fraction by Weight: ca. 64 %
Specific Gravity (H2O = 1): 1.318
pH: approx 5.0
Solubility in Water (by Weight): Complete

GT = Greater than; LT = Less than

D-0018.000I
82-1264

E000033-3-43-67

=====
 FIRE AND EXPLOSION HAZARD
 =====

FLASH POINT: None

EXTINGUISHING MEDIA: Use appropriate agent for surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Fire or excessive heat may cause production of hazardous decomposition products.

 =====

 REACTIVITY DATA
 =====

STABILITY: Stable

INCOMPATIBILITY: Strong alkali

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may produce oxides of nitrogen, sulfur, and ammonia gas.

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION: Will not occur.

 =====

 TOXICOLOGICAL PROPERTIES
 =====

EXPOSURE LIMITS:

Component: Acetic acid

ACGIH TLV: 10 ppm - TWA 15 ppm STEL (ACGIH 1990-1991)

OSHA PEL: 10 ppm - TWA

EXPOSURE EFFECTS:

Inhalation: Low hazard for recommended handling

Eyes: No specific hazard known. May cause transient irritation.

Skin: Low hazard for recommended handling.

Ingestion: Expected to be a low ingestion hazard.

TOXICITY DATA:

Test	Species	Result (2)	Classification (1)
Oral LD50	Rat	GT 2540 mg/kg	Slightly toxic
Skin Irritation	Guinea Pig	Moderate irritation	
Eye Irritation	Rabbit	Slight irritation	
Skin Absorption	Guinea Pig	GT 20 mL/kg	

 =====

 PROTECTION AND PREVENTIVE MEASURES
 =====

VENTILATION: Good ventilation* should be sufficient. Supplementary ventilation or respiratory protection may be needed in special circumstances.

*Typically, 10 room volumes per hour is considered good general ventilation: ventilation rates should be matched to conditions of use.

SKIN AND EYE PROTECTION: Protective gloves should be worn. Safety glasses with side shields should be worn.

 =====

D-0018.000I
82-1264

=====

STORAGE AND DISPOSAL

=====

SPECIAL STORAGE AND HANDLING PRECAUTIONS: Keep container tightly closed and away from strong alkali.

SPILL, LEAK, AND DISPOSAL PROCEDURES: Flush material to sewer with large amounts of water. Discharge, treatment, or disposal may be subject to federal, state, or local laws.

=====

FIRST AID

=====

Inhalation: If symptomatic, remove to fresh air. Get medical attention if symptoms persist.

Eyes: Immediately flush eyes with plenty of water. Get medical attention if symptoms occur.

Skin: Wash after each contact. Get medical attention if symptoms occur.

Ingestion: If swallowed drink 1-2 glasses of water, get medical attention.

=====

ENVIRONMENTAL EFFECTS DATA

=====

This environmental effects summary is written to assist in addressing emergencies created by an accidental spill, which might occur during the shipment of this product, and in general, it is not meant to address discharges to sanitary sewers or publically owned treatment works.

Some laboratory test data and published data are available for the major components of this formulation. Although this product, as such, has not been tested for environmental effects, the data, mentioned above, have been used to provide the following estimates of potential environmental impact, in the event of an accidental spill: (2-11)

This chemical formulation is expected to have a moderate biological oxygen demand, and it may cause oxygen depletion in aquatic systems. It is expected to have a low potential to affect aquatic organisms, secondary waste treatment microorganisms, and the germination of some plants, and a moderate to high potential to affect the growth of some plants. The organic components of this chemical formulation are readily biodegradable. They are not likely to bioconcentrate. When diluted with a large amount of water, this formulation released directly or indirectly into the environment is not expected to have a significant impact.

=====

TRANSPORTATION

=====

For Transportation information regarding this product, please phone the Eastman Kodak Distribution Center nearest you: Rochester, NY (716) 588-3536 or 588-3573 or 588-3505; Oak Brook, IL (312) 954-6000; Chamblee, GA (404) 455-0123; Dallas, TX (214) 241-1611; Whittier, CA (213) 945-1255; Honolulu, HI (808) 833-1661.

=====

D-0018.000I
82-1264

=====

REFERENCES

1. Hodge, H.C. and Sterner, J.H., American Industrial Hygiene Association Quarterly, 10, 93 (1949).
2. Unpublished Data. Health, Safety, and Human Factors Laboratory. Eastman Kodak Company, Rochester, New York.
3. Verschueren, K., Handbook of Environmental Data on Organic Chemicals, Van Norstrand Reinhold Company, New York, N.Y. 1983.
4. Battelle's Columbus Laboratories, Water Quality Criteria Data Book - Vol. 3 - Effects of Chemicals on Aquatic Life - Selected Data from the Literature Through 1968, for the U.S. Environmental Protection Agency, Project No. 18050 GWV, Contract No. 68-01-0007, May 1971.
5. National Association of Photographic Manufacturers, Inc. and Hydroscience, Inc., Environmental Effects of Photoprocessing Chemicals, National Association of Photographic Manufacturers, Harrison, NY, 1974, 2 Vols.
6. Kodak Publication J-41, BOD5 and COD of Photographic Chemicals, Eastman Kodak Co., 1981.
7. McKee, J.E. and Wolf, H.W., Eds., Water Quality Criteria, State of California, Publication No. 3-A, 1963.
8. Bringmann, G. and Kuehn, R., Z. Wasser Abwasser Forsch., 10(5), 161-6 (1977) (in German).
9. Bringmann, G. and Kuehn, R., Z. Wasser Abwasser Forsch., 15(1), 1-6 (1982) (in German).
10. Juhnke, I. and Luedemann, D., Z. Wasser Abwasser Forsch., 11(5), 161-4 (1978) (in German).
11. Pomona College, Medicinal Chemistry Project, Chemical Parameter Data Base, Leo, A.J. and Hansch, C., Eds., Seaver Chemistry Laboratory, Claremont, CA, June 20, 1987.

=====

PREPARATION INFORMATION

Health and Environment Laboratories
Eastman Kodak Company
Rochester, New York 14652-3615

=====

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.

=====

D-0018.0001
82-1264