



**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 the Marketing and Distribution Center in your area.

Date of Preparation: 7/30/83

Approved by U.S. Department of Labor

**SECTION I. IDENTIFICATION**

- Product Name: KODAK Rapid Fixer, Part A
- Formula: Aqueous Mixture
- Kodak Photographic Chemicals 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 Accession Number: 427810

**SECTION II. PRODUCT AND COMPONENT HAZARD DATA**

PRINCIPAL			Kodak	
A. COMPONENT(S):	Percent	TLV*	Accession No.	CAS Reg. No.
Water	40-50	---	035290	7732-18-5
Ammonium thiosulfate	40-50	---	909586	7783-18-8
Sodium acetate	5-10	---	900227	127-09-3
Boric acid	< 5	---	901064	10043-35-3

**B. PRECAUTIONARY LABEL STATEMENT(S):**

Commercial Label

No health hazard warning language is needed on the containers.

Household Label

Contains boric acid

**CAUTION!** HARMFUL IF TAKEN INTERNALLY.  
If swallowed, induce vomiting.  
Call a physician at once.  
KEEP OUT OF THE REACH OF CHILDREN

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**SECTION III. PHYSICAL DATA**

- Appearance and Odor: Clear light yellow solution; slight sulfur dioxide and acetic acid odor
- Boiling Point: > 100 °C (> 212 °F) @ 760 mmHg
- Vapor Pressure: ~ 18 mmHg @ 20 °C
- Evaporation Rate (n-butyl acetate = 1): Not Available
- Vapor Density (Air = 1): ~ 0.6
- Volatile Fraction by Weight: ~ 50 %
- Specific Gravity (H<sub>2</sub>O = 1): 1.305
- pH: 4.37
- Solubility in Water: Complete

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**SECTION IV. FIRE AND EXPLOSION HAZARD DATA**

- Flash Point: None
- Extinguishing Media: Not Applicable
- Special Fire Fighting Procedures:
  - Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
- Unusual Fire and Explosion Hazards:
  - Fire or excessive heat may cause production of hazardous decomposition products.

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**SECTION V. REACTIVITY DATA**

- Stability: Stable
- Incompatibility: Strong alkali
- Hazardous Decomposition Products: Ammonia
- Hazardous Polymerization: Will not occur.

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**SECTION VI. TOXICITY AND HEALTH HAZARD DATA**

- A. EXPOSURE LIMITS: Not Applicable
- B. EXPOSURE EFFECTS: Low hazard

Ingestion: Harmful if taken internally.

- C. FIRST AID: In case of eye contact, flush with plenty of water.

Ingestion: If swallowed, if conscious, rinse mouth and induce vomiting immediately by giving 1 or 2 glasses of water and touching back of throat with finger or blunt object. Never give anything by mouth to an unconscious person.

CALL A PHYSICIAN AT ONCE.

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SECTION VII. PERSONAL PROTECTION AND CONTROLS

A. RESPIRATORY PROTECTION: None should be needed.

B. VENTILATION:

Local Exhaust: None should be needed.

Mechanical (General): Recommended.

C. SKIN AND EYE PROTECTION:

None should be needed, but good industrial hygiene practice should be followed.

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SECTION VIII. SPECIAL STORAGE AND HANDLING PRECAUTIONS

Avoid contact with strong alkali.

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SECTION IX. 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.

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SECTION X. ENVIRONMENTAL EFFECTS DATA

A. SUMMARY:

This chemical formulation has not been tested for environmental effects. Some laboratory test data and published data are available for the major components of this chemical formulation, and these data have been used to provide the following estimate of environmental impact:<sup>1,2,3,4</sup>

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

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**SECTION XI. TRANSPORTATION**

Transportation information may be obtained by requesting an EXTERNAL TRANSPORTATION ADDENDUM sheet by catalog number(s) from Kodak Publications Data Services, Eastman Kodak Company, 343 State Street, Rochester, New York 14650.

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**SECTION XII. REFERENCES**

1. Toxicity results are from unpublished data, Health, Safety, and Human Factors Laboratory, Eastman Kodak Company, Rochester, New York.
  2. Verschueren, K., Handbook of Environmental Data on Organic Chemicals, Van Nostrand Reinhold Company, New York, N.Y., 1977.
  3. Battelle's Columbus Laboratories, Water Quality Critical 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. 68-01-007, May 1971.
  4. National Association of Photographic Manufacturers, Inc. and Hydrosience, Inc., Environmental Effects of Photoprocessing Chemicals, National Association of Photographic Manufacturers, Harrison, New York, 1974, 2 vols.
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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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@146-4106\*  
@146-4114\*  
@197-3247\*  
@128-2839\*  
@186-6342\*  
82-1264

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 other purposes, call the Marketing and Distribution Center in your area

Date of Revision: 6/15/87

Kodak Accession Number: 365686

SECTION I. IDENTIFICATION

- Product Name: KODAK Rapid Fixer, Part B
- Formula: Aqueous Mixture
- Kodak Photographic Chemicals Catalog Number(s): CAT 173 3013 - 72 ounces; CAT 197 3221 - 5 Gallons; CAT 146 4106 - To Make 1 Gallon; CAT 146 4114 - To Make 5 Gallons
- Solution Number: 4415
- Kodak's Internal Hazard Rating Codes: R: 1 S: 2 F: 0 C: 0

SECTION II. PRODUCT AND COMPONENT HAZARD DATA

PRINCIPAL COMPONENT(S):	Weight Percent	ACGIH TLV(R)	Kodak Accession No.	CAS Reg. No.
Water	65-75	---	035290	7732-18-5
Aluminum sulfate	15-20	2 mg/m <sup>3</sup>	907954	10043-01-3
*Sulfuric acid**	11	1 mg/m <sup>3</sup> ***	907485	7664-93-9

\*Principal Hazardous Component(s)

\*\*Chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

\*\*\*See Section VI-A for additional information on exposure limits

SECTION III. PHYSICAL DATA

- Boiling Point: GT 100 C (GT 212 F) @ 760 mmHg
- Vapor Pressure: ca. 17 mmHg @ 20 C
- Evaporation Rate (n-butyl acetate = 1): Not Available
- Vapor Density (Air = 1): ca. 0.6
- Volatile Fraction by Weight: ca. 71 %
- Specific Gravity (H<sub>2</sub>O = 1): 1.30
- pH: ca. 1.0
- Solubility in Water (by Weight): Complete

GT = Greater than; LT = Less than

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SECTION IV. FIRE AND EXPLOSION HAZARD DATA

- Flash Point: None
- Flammable Limits in Air (% by volume in air): None
- Extinguishing Media: Use appropriate agent for surrounding fire.
- Special Fire Fighting Procedures: None
- Unusual Fire and Explosion Hazards: None

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SECTION V. REACTIVITY DATA

- Stability: Stable
- Incompatibility: Alkali
- Hazardous Decomposition Products: None
- Hazardous Polymerization: Will not occur.

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SECTION VI. TOXICITY AND HEALTH HAZARD DATA

A. EXPOSURE LIMITS:

See Section II  
OSHA Permissible Exposure Limit (PEL): 1 mg/m<sup>3</sup> (sulfuric acid)

B. EXPOSURE EFFECTS:

Inhalation: Low hazard for usual industrial handling.

Eyes: Causes eye irritation.

Skin: Prolonged or repeated skin contact causes irritation.

Ingestion: May cause irritation or burns of the esophagus.

C. FIRST AID:

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

Skin: Immediately wash skin with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms are present after washing. Launder contaminated clothing before reuse.

Ingestion: Do not induce vomiting. Give milk or water. CALL A PHYSICIAN AT ONCE.

D. TOXICITY DATA:

Test	Species	Result (2)	Classification (3)
Acute Oral LD50	Rat	0.5 - 5.0 g/Kg	Slightly toxic
Skin Irritation	Guinea Pig	Moderate irritation	
Skin Sensitization	Guinea Pig	None sensitized	
Eye Irritation	Rabbit	Moderate irritation	

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SECTION VII. PERSONAL PROTECTION AND CONTROLS

A. VENTILATION: Good general ventialetion should be sufficient.

B. SKIN AND EYE PROTECTION:

Protective gloves should be worn.

Safety glasses with side shields or goggles are recommended.

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SECTION VIII. SPECIAL STORAGE AND HANDLING PRECAUTIONS

None

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SECTION IX. SPILL, LEAK, AND DISPOSAL PROCEDURES

Neutralize with sodium carbonate.

Flush material to sewer with large amounts of water.

Discharge, treatment or disposal may be subject to federal, state or local laws.

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SECTION X. ENVIRONMENTAL EFFECTS DATA

This chemical formulation has not been tested for environmental effects. Some published data are available for the major components of this chemical formulation and these data have been used to provide the following estimate of environmental impact: 1

This chemical formulation is a strongly acidic aqueous solution, and this property is the only one expected to cause adverse environment effects. This chemical formulation has a low biological oxygen demand, and it is expected to cause little oxygen depletion in aquatic systems. It is expected to have a low potential to affect aquatic organisms. The components of this chemical formulation are not likely to bioconcentrate. If diluted with a large amount of water, a moderate quantity of this chemical formulation released into the environment is not expected to have a significant impact.

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SECTION XI. TRANSPORTATION

For transportation information regarding this product, 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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