

MATERIAL SAFETY DATA SHEET  
EASTMAN KODAK COMPANY

Date of Revision: 2/22/90

Kodak Accession Number: 355469

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PRODUCT INFORMATION

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Product Name: KODAK Rapid Access Developer and Replenisher

Formula: Aqueous Mixture

Kodak Catalog Number(s): CAT 128 4181 - To Make 25 Gallons

Solution Number: 4123

Kodak Hazard Rating Codes: R: 1 S: 2 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.

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COMPONENT INFORMATION

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	Weight Percent	CAS Number	Accession Number
Water	65-70	7732-18-5	035290
Potassium sulfite	15-20	10117-38-1	907064
*Hydroquinone**	6	123-31-9	900356
Sodium carbonate	1-5	497-19-8	900860
Potassium hydroxide	1-5	1310-58-3	901383

\*Principal Hazardous Component(s)

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

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PHYSICAL DATA

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Appearance and Odor: Clear, off-white solution; odorless

Boiling Point: GT 100 C (GT 212 F)

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. 65 %

Specific Gravity (H2O = 1): ca. 1.22

pH: ca. 11.0

Solubility in Water (by Weight): Complete

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GT = Greater than; LT = Less than

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**FIRE AND EXPLOSION HAZARD**

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FLASH POINT: None, noncombustible

EXTINGUISHING MEDIA: Use appropriate agent for surrounding fire.

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

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

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**REACTIVITY DATA**

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STABILITY: Stable

INCOMPATIBILITY: Strong mineral acids

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may produce oxides of sulfur.

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION: Will not occur.

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**TOXICOLOGICAL PROPERTIES**

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**EXPOSURE LIMITS:**

Component: Hydroquinone

ACGIH TLV: 2 mg/m<sup>3</sup>-TWA (ACGIH 1988-89)

OSHA PEL: 2 mg/m<sup>3</sup>-TWA

Component: Potassium hydroxide

ACGIH TLV: 2 mg/m<sup>3</sup>-TWA, Ceiling (ACGIH 1988-89)

OSHA PEL: 2 mg/m<sup>3</sup>-TWA, Ceiling

**EXPOSURE EFFECTS:**

Inhalation: Low hazard for recommended handling.

Eyes: Liquid may cause irritation.

Skin: Prolonged or repeated skin contact may cause skin irritation. May cause an allergic skin reaction.

Ingestion: Harmful if swallowed.

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**PROTECTION AND PREVENTIVE MEASURES**

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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: Safety glasses with side shields are recommended. Impervious gloves and clothing should be worn. The routine use of a non-alkaline (acid) type of skin cleaner and regular cleaning of working surfaces, gloves, etc, will help minimize the possibility of allergic skin reaction.

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STORAGE AND DISPOSAL
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SPECIAL STORAGE AND HANDLING PRECAUTIONS: Keep container tightly closed and away from acids.

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

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FIRST AID
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Eyes: Immediately flush eyes with plenty of water and get medical attention if any symptoms are present after washing.

Skin: Flush skin with plenty of water and wash with a non-alkaline (acid) type of skin cleaner. If skin irritation or an allergic skin reaction develops, get medical attention. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Ingestion: If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

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ENVIRONMENTAL EFFECTS DATA
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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: (1-12)

This chemical formulation is a strongly alkaline aqueous solution, and this property may cause adverse environmental effects. It is expected to have a moderate biological oxygen demand, and may cause oxygen depletion in aquatic systems. It is expected to have a high potential to affect aquatic organisms and a low potential to affect secondary waste treatment microorganisms. It is expected to have a moderate potential to affect the germination and growth of some plants. The organic component of this chemical formulation is biodegradable and is not expected to persist in the environment. The component parts are not likely to bioconcentrate. The direct instantaneous discharge to a receiving body of water of an amount of this formulation which will rapidly produce, by dilution, a final concentration of 0.08 mg/L, or less, is not expected to cause an adverse environmental effect. After dilution with a large amount of water, followed by secondary waste treatment, the chemicals in this formulation are not expected to have any adverse environmental impact.



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 TRANSPORTATION  
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For Transportation information regarding this product, please phone the Eastman Kodak Distribution Center nearest you: Rochester, NY (716) 588-9293; 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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 REFERENCES  
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  2. Verschueren, K., Handbook of Environmental Data on Organic Chemicals, Second Edition, Van Nostrand Reinhold Company, New York, NY, 1983.
  3. 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.
  4. National Association of Photographic Manufacturers, Inc. and Hydrosience, Inc., Environmental Effects of Photoprocessing Chemicals, National Association of Photographic Manufacturers, Harrison, NY, 1974, 2 Vols.
  5. Kodak Publication J-41, BOD5 and COD of Photographic Chemicals, Eastman Kodak Co., 1981.
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  7. Bringmann, G. and Kuehn, R., Z. Wasser Abwasser Forsch., 10(5), 161-6 (1977) (in German).
  8. Bringmann, G. and Kuehn, R., Z. Wasser Abwasser Forsch., 15(1), 1-6 (1982) (in German).
  9. Juhnke, I. and Luedemann, D., Z. Wasser Abwasser Forsch., 11(5), 161-4 (1978) (in German).
  10. Wellens, H., Z. Wasser Abwasser Forsch., 15(2) 49-52 (1982) (in German).
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  12. Pomona College, Medicinal Chemistry Project, Chemical Parameter Data Base, Leo, A.J. and Hansch, C., Eds., Seaver Chemistry Laboratory, Claremont, CA, June 20, 1987.
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 PREPARATION INFORMATION  
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Health and Environment Laboratories  
 Eastman Kodak Company  
 Rochester, New York 14652-3615

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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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