

MATERIAL SAFETY DATA SHEET  
EASTMAN KODAK COMPANY

Date of Revision: 12/12/89

Kodak Accession Number: 440508

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PRODUCT INFORMATION

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Product Name: KODAK Developer D-76

Formula: Solid Mixture

Product Use: Chemicals for processing photographic plates

Kodak Catalog Number(s): CAT 146 4817 - To Make 1 Gallon; CAT 123 0895 - To Make 1 Quart; CAT 123 0937 - To Make 1 Gallon; CAT 146 4791 - To Make 1 Quart; CAT 146 4809 - To Make 1/2 Gallon; CAT 146 4825 - To Make 10 Gallons

Mixture Number: 5239

Kodak's 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
Sodium sulfite	85-90	7757-83-7	901148
*Hydroquinone*	5	123-31-9	900356
*p-Methylaminophenol sulfate	1-5	55-55-0	900615
Sodium tetraborate, pentahydrate	1-5	1330-43-4	901365
Boric anhydride	LT 1	1303-86-2	902685

\*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.

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PHYSICAL DATA

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Appearance and Odor: Yellow powder; odorless

Melting Point: Not Available

Vapor Pressure: Negligible

Evaporation Rate (n-butyl acetate = 1): Negligible

Vapor Density (Air = 1): Not Applicable

Volatile Fraction by Weight: Negligible

Specific Gravity (H2O = 1): Not Available

Solubility in Water (by Weight): Appreciable

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GT = Greater than; LT = Less than

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FIRE AND EXPLOSION HAZARD

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FLASHPOINT: 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: Acids

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

HAZARDOUS POLYMERIZATION: Will not occur.

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TOXICOLOGICAL PROPERTIES

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EXPOSURE LIMITS:

Component: Hydroquinone

ACGIH TLV: 2mg/m<sup>3</sup> - TWA (ACGIH 1989 - 1990)

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

Component: Sodium tetraborate

ACGIH TLV: 1 mg/m<sup>3</sup> - TWA (ACGIH 1989 - 1990)

OSHA PEL: 10 mg/m<sup>3</sup> - TWA

EXPOSURE EFFECTS:

Inhalation: Low hazard for recommended handling.

Eyes: Causes irritation.

Skin: Causes irritation. May cause allergic skin reaction.

Ingestion: Harmful if swallowed.

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PROTECTION AND PREVENTIVE MEASURES

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VENTILATION: Good general ventilation should be sufficient.

SKIN AND EYE PROTECTION: Safety glasses with side shields are recommended. Impervious gloves 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 PRECAUTION: Keep container tightly closed and away from acids.

**SPILL, LEAK, AND DISPOSAL PROCEDURES:** Flush 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 for at least 15 minutes and get medical attention.

**Skin:** Flush skin with plenty of water and wash with a non-alkaline (acid) type of skin cleanser. 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 expected to have a moderate biological oxygen demand and it may cause oxygen depletion in aquatic systems. It is expected to have a high potential to affect aquatic organisms and secondary waste treatment microorganisms or moderate potential to affect the germination and growth of some plants. The organic components of this chemical formulation are biodegradable and are not expected to persist in the environment. They are not likely to bioconcentrate. The direct instantaneous discharge to a receiving body of water of an amount of this solution which will rapidly produce, by dilution, a final concentration of 0.04 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) 588-9232; 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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## REFERENCES

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  7. McKee, J.E. and Wolf, H.W., Eds., "Water Quality Criteria," State of California, Publication No. 3-A, 1963.
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  10. Juhnke, I. and Luedemann, D., "Results of the Study of 200 Chemical Compounds on Acute Fish Toxicity Using the Golden Orfe Test," Z. Wasser Abwasser Forsch., 11(5), 161-4 (1978) (in German).
  11. Wellens, H., "Comparison of the Sensitivity of Brachydanio rerio and Leuciscus idus in the Study of the Toxicity of Fish of Chemical Compounds and Waste Waters," Z. Wasser Abwasser Forsch., 15(2) 49-52 (1982) (in German).
  12. Pomona College, Medicinal Chemistry Project, "Chemical Parameter Data Base," Leo, A.J. and Hansch, C., Eds., Seaver Chemistry Laboratory, Claremont, California, June 21, 1985.
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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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