MATERIAL SAFETY DATA SHEET
EASTMAN KODAK COMPANY

Date of Revision: 02/14/91 Accession Number: 448052

PRODUCT INFORMATION

Product Name: KODAFIX Solution
Formula: Aqueous mixture
Kodak Catalog Number(s): CAT 146 4080 - To Make 1 Gallon
Solution Number: 5385
Kodak's Internal 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	50-55	7732-18-5	035290
Ammonium Thiosulfate	30-35	7783-18-8	909586
Sodium bisulfite	1-5	7631-90-5	900760
Sodium acetate	1-5	127-09-3	900227
Boric acid	1-5	10043-35-3	901064
Ammonium sulfite	1-5	10196-04-0	063434
Aluminum sulfate	1-5	10043-01-3	907954
Acetic acid	1-5	64-19-7	900763

PHYSICAL DATA

Appearance and Odor: Colorless solution; ammonia odor
Boiling Point: GT 100 C (GT 212 F)
Vapor Pressure: ca. 18mmHg @ 20 C
Vapor Density (Air = 1): ca. 0.6
Volatile Fraction by Weight: 54 %
Specific Gravity (H2O = 1): 1.283
pH: 4.86
Solubility in Water (by Weight): Complete

GT = Greater than; LT = Less than

FIRE AND EXPLOSION HAZARD

FLASH POINT: 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.

REACTIVITY DATA

STABILITY: Stable
INCOMPATIBILITY: None with common materials and contaminants with which the product may reasonably come into contact.
HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may produce ammonia and oxides of nitrogen and sulfur.
CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION: Will not occur.

TOXICOLOGICAL PROPERTIES

EXPOSURE LIMITS:
Component: Acetic acid
Threshold Limit Value (TLV): 10ppm-8hr TWA (ACGIH 1990-91)
Permissible Exposure Limit (PEL): 10ppm TWA-8hr TWA (OSHA)

Component: Sodium bisulfite
Threshold Limit Value (TLV): 5mg/m3-8hr TWA (ACGIH 1990-91)
Permissible Exposure Limit (PEL): 5mg/m3-8hr TWA (OSHA)

EXPOSURE EFFECTS:
Inhalation: Low hazard for recommended handling.

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

Skin: Low hazard for recommended handing.

Ingestion: Expected to be a low ingestion hazard.

PROTECTION AND PREVENTIVE MEASURES

VENTILATION: Good general ventilation should be sufficient.

SKIN AND EYE PROTECTION: Safety glasses with side shields should be worn in chemical handling. For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.

STORAGE AND DISPOSAL

SPECIAL STORAGE AND HANDLING PRECAUTIONS: None

SPILL, LEAK, AND DISPOSAL PROCEDURES: Small Spills: Flush material to sewer with large amounts of water. Large Spills and Transportation Incidents: Absorb spill with inert material and place in a container for chemical waste. Prevent runoff from entering drains, sewers, and streams. Contract with a licensed chemical disposal agency. Flush residual spill and area with 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: Any material that contacts the eye should be washed out immediately with 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. Seek medical advice.

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: (1-10)

This chemical formulation is expected to have a high biological oxygen demand, and it may cause oxygen depletion in aquatic systems if discharged directly to the environment without treatment. It is expected to have a high potential to affect the germination and growth of some plants. It is expected to have a low potential to affect aquatic organisms and secondary waste treatment microorganisms. The organic components of this chemical formulation are biodegradable and are not expected to persist in an aquatic environment. They are not likely to bioconcentrate. 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.

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.

REFERENCES

1. Unpublished data, Health and Environment Laboratories, Eastman Kodak Company, Rochester, NY.

2. Verschueren, K., Handbook of Environmental Data on Organic Chemicals, Van Norstrand Reinhold Company, New York, N.Y. 1983.

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 Hydroscience, 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.

6. McKee, J.E. and Wolf, H.W., Eds., Water Quality Criteria, State of California, Publication No. 3-A, 1963.

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. 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

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