

MATERIAL SAFETY DATA SHEET
EASTMAN KODAK COMPANY

Date of Revision: 6/13/89

Kodak Accession Number: 354752

PRODUCT INFORMATION

Product Name: KODAK Indicator Stop Bath
Formula: Aqueous Mixture
Kodak Catalog Number(s): CAT 146 4247 - To Make 16 Fluid Ounces; CAT 140
8731 - 1 Gallon
Solution Number: 2838
Kodak Hazard Rating Codes: R: 2 S: 3 F: 2 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
*Acetic acid	85-90	64-19-7	900763
Water	10-15	7732-18-5	035290

*Principal Hazardous Component(s)

PHYSICAL DATA

Appearance and Odor: Clear to slightly yellow solution; sharp vinegar odor
Boiling Point: GT 100 C (GT 212 F)
Vapor Pressure: ca. 14.6 mmHg @ 20 C
Evaporation Rate (n-butyl acetate = 1): Not Available
Vapor Density (Air = 1): ca. 1.9
Volatile Fraction by Weight: ca. 100 %
Specific Gravity (H2O = 1): 1.07
pH: ca. 2.0
Solubility in Water (by Weight): Complete

FIRE AND EXPLOSION HAZARD

FLASH POINT: 67 C (152 F) Tag Open Cup
EXTINGUISHING MEDIA: Water spray; Dry chemical; Carbon dioxide, "Alcohol" foam
SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus
and protective clothing.
UNUSUAL FIRE AND EXPLOSION HAZARDS: None

GT = Greater than; LT = Less than

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REACTIVITY DATA

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STABILITY: Stable

INCOMPATIBILITY: Strong oxidizers, Bases

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion will produce carbon dioxide and probably carbon monoxide.

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION: Will not occur.

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TOXICOLOGICAL PROPERTIES

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EXPOSURE LIMITS:

Component: Acetic acid

ACGIH Threshold Limit Value (TLV) 10 ppm, 8-h TWA, (ACGIH 1988-89)

OSHA Permissible Exposure Limit (PEL): 10 ppm, 8-h TWA

EXPOSURE EFFECTS:

Inhalation: Acetic acid vapor is irritating to the upper respiratory tract. Unacclimatized humans experience extreme eye and nasal irritation at concentrations in excess of 25 ppm. Fifty ppm is intolerable; however, acclimatized workers may tolerate concentrations up to 30 ppm. Exposures to such vapor concentrations have produced neither severe systemic injury nor death. This is most probably due to the fact that acetic acid is readily metabolized within the body. Repeated exposures to high vapor concentrations may produce respiratory tract irritation with pharyngeal edema, chronic bronchitis, discoloration of the teeth, and thickening of the skin.(1)

Eyes: Severe eye burns can result from direct contact with the liquid. Vapors are very irritating to the eyes.

Skin: Causes severe skin burns. These are deep burns and usually slough in a day or two. Concentrations below approximately 50 % acetic acid are moderately irritating to the skin and usually cause minimal injury if promptly removed from the skin. Sensitivity dermatitis has been reported.(1)

Ingestion: The ingestion of concentrated acetic acid (Approx 95 %) produces burns of the upper digestive tract. This is characterized by severe pain in the mouth, pharynx, esophagus, and stomach. There may be immediate vomiting with diarrhea and possible bloody stools. The ingestion of as little as 1.0 mL of 100 % (glacial) acetic acid has resulted in perforation of the esophagus. Severe intestinal irritation with gross bleeding, collapse, and death has been reported. Vinegar, a dilute impure solution containing acetic acid at approximately 4 % to 7 % concentration, is a common item of the human diet.(1)

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PROTECTION AND PREVENTIVE MEASURES

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VENTILATION: Good general ventilation* should be used. Local exhaust ventilation or an enclosed handling system may be needed to control air contamination to acceptable levels.

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

RESPIRATORY PROTECTION: A NIOSH approved acid gas respirator should be worn if needed. If respirators are used, a program should be instituted to assure compliance with OSHA standard 29CFR 1910.134.

SKIN AND EYE PROTECTION: Wear goggles or face shield. Impervious gloves and clothing should be worn.

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STORAGE AND DISPOSAL

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SPECIAL STORAGE AND HANDLING PRECAUTIONS: Material is classified as a combustible liquid. Keep away from heat and flame. Keep from contact with oxidizing materials. Keep container tightly closed and away from bases.

SPILL, LEAK, AND DISPOSAL PROCEDURES: Neutralize with baking soda (sodium bicarbonate). Flush material to sewer with large amounts of water. Wash contaminated area well with soap and water. Discharge, treatment, or disposal may be subject to federal, state, or local laws.

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FIRST AID

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Inhalation: Remove to fresh air. Treat symptomatically. If symptoms are present, get medical attention.

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

Skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash contaminated clothing before reuse. Destroy or wash contaminated shoes.

Ingestion: If swallowed, do NOT induce vomiting. Immediately give victim a glass of water. Never give anything by mouth to an unconscious person.

TOXICITY DATA (For Glacial Acetic Acid, Approx 95 %)

TEST	SPECIES	RESULT	CLASSIFICATION(4)
Acute Oral LD50	Rat	3.3 g/kg(2)	Slightly toxic
Acute Oral LD50	Mouse	4.9 g/kg(2)	
Inhalation LCLo (4 h)	Rat	16,000 ppm(2)	
Inhalation LC50 (1 h)	Mouse	5620 ppm(2)	
Skin Absorption LD50	Rabbit	1.06 g/kg(2)	Slightly toxic
Skin Irritation	Guinea Pig	Severe burns(3)	
Eye Irritation	Rabbit	Complete destruction(3)	

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ENVIRONMENTAL EFFECTS DATA

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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, secondary waste treatment microorganisms, and the germination and growth of some plants. The components of this chemical formulation are readily biodegradable and are not likely to bioconcentrate. When diluted with water, this chemical formulation released directly or indirectly into the environment is not expected to have a significant impact. (3)

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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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1. American National Standard Z37.39 (1974), Acceptable Concentrations of Acetic Acid.
 2. Registry of Toxic Effects of Chemical Substances, U.S. Department of Health, Education, and Welfare, 1979.
 3. Toxicity results are from unpublished data, Health and Environment Laboratories, Eastman Kodak Company, Rochester, New York.
 4. Hodge, H.C. and Sterner, J.H., American Industrial Hygiene Association Quarterly, 10, 93 (1949).
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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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