

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.

Revised Date of Preparation: 5/11/88 Kodak Accession Number: 354752

SECTION I. IDENTIFICATION

- Product Name: KODAK Indicator Stop Bath
- Formula: Aqueous Mixture
- Kodak Photographic Chemicals Catalog Number(s): CAT 146 4247 - 16 Fluid Ounces; CAT 140 8731 - 1 Gallon
- Solution Number: 2838
- Kodak Hazard Rating Codes: R: 2 S: 3 F: 2 C: 0

SECTION II. PRODUCT AND COMPONENT HAZARD DATA

A. COMPONENT(S):	Weight Percent	ACGIH TLV	Kodak Accession No.	CAS Reg. No.
*Acetic acid	85-90	10 ppm**	900763	64-19-7
Water	10-15	---	035290	7732-18-5

*Principal Hazardous Component(s)

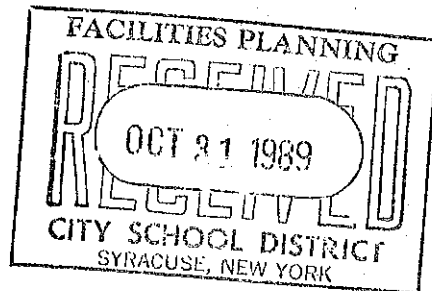
**See Section VI-A for additional information on exposure limits.

SECTION III. PHYSICAL DATA

- Appearance and Odor: Clear to slightly yellow solution; sharp vinegar odor
- Boiling Point: GT 100°C (GT 212 F) @ 760 mmHg
- Vapor Pressure: ca. 14.6 mmHg @ 20 C
- Evaporation Rate (n-butyl acetate = 1): Not Available
- Vapor Density (Air = 1): GT 1.9
- Volatile Fraction by Weight: ca. 100 %
- Specific Gravity (H2O = 1): 1.07
- pH: ca. 2.0
- Solubility in Water (by Weight): Complete

I-0009.000E

84-0014



=====

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

- Flash Point: 55 C (131 F) Tag open cup, see below.
- Extinguishing Media: Water spray; Dry chemical; CO2
- Special Fire Fighting Procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
- Unusual Fire and Explosion Hazards: No closed cup flash point in standard apparatus due to flame quenching. However, in vessels of adequate size, vapors are flammable above 42 C (108 F).

=====

SECTION V. REACTIVITY DATA

- Stability: Stable
- Incompatibility: Strong oxidizers, Alkali
- Hazardous Decomposition Products: Combustion will produce carbon dioxide and probably carbon monoxide.
- Hazardous Polymerization: Will not occur.

=====

SECTION VI. TOXICITY AND HEALTH HAZARD DATA

A. EXPOSURE LIMITS:

See Section II

OSHA Permissible Exposure Limit (PEL): 10 ppm - TWA (acetic acid)
 Threshold Limit Value (TLV) 10 ppm, 8-h TWA, ACGIH 1987-88.

B. 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)

C. FIRST AID:

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 immediately.

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

Ingestion: Do not induce vomiting. If conscious give one glass of milk or water. Never give anything by mouth to an unconscious person. CALL A PHYSICIAN AT ONCE.

D. 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)	

SECTION VII. VENTILATION AND PERSONAL PROTECTION

- A. **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.

- B. **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.

C. SKIN AND EYE PROTECTION:

Wear goggles or face shield.

Impervious gloves and clothing should be worn.

=====

SECTION VIII. SPECIAL STORAGE AND HANDLING PRECAUTIONS

Treat as a combustible liquid. Keep away from heat and flame.

Keep from contact with oxidizing materials.

Avoid contact with alkalis.

=====

SECTION IX. SPILL, LEAK, AND DISPOSAL PROCEDURES

Remove all sources of ignition.

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.

=====

SECTION X. ENVIRONMENTAL EFFECTS DATA

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)

=====

SECTION XI. TRANSPORTATION

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.

=====

SECTION XII. REFERENCES

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).

=====

I-0009.000E

84-0014

=====

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.

=====

I-0009.000E
84-0014

...