



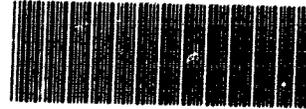
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October 22, 1991

Document Processing Center (TS-790)  
Office of Toxic Substances  
Environmental Protection Agency  
401 M St., S.W.  
Washington, D.C. 20460



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ATTN: 8(d) Health and Safety Reporting Rule (Notification/Reporting)

Ladies and Gentlemen:

Subject: Chloroacetaldehyde (CAS No. 107-20-0)

Enclosed are studies in the possession of Eastman Kodak Company (Kodak) required to be submitted to the Environmental Protection Agency under amended regulations published in the Federal Register on August 29, 1991. Routine monitoring data and documents containing only underlying data for a study have not been submitted.

Any questions concerning this submission should be directed to Mr. James R. Humphreys, (716) 722-4749.

Sincerely,

*R. Hays Bell*

R. Hays Bell, Ph.D.  
Vice President and Director  
Health and Environment Laboratories  
(716) 722-2879

RHB/JRH:mrc  
Enclosures

1911N



107-20-0

**MATERIAL SAFETY DATA SHEET**

**EASTMAN CHEMICALS DIVISION  
EASTMAN KODAK COMPANY  
Kingsport, Tennessee 37662**

For Health Hazard Information, Call 615/229-6094 Date of Preparation 03-18-86

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**SECTION I. IDENTIFICATION**

-- Name: Chloroacetaldehyde

-- Formula:  $C_2H_3ClO$

-- Molecular Weight: 78.51  
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**SECTION II. COMPONENT AND PRECAUTIONARY DATA**

A. COMPONENT:	Approx Weight %	CAS Reg No	Eastman Kodak No
Chloroacetaldehyde*	100	107-20-0	906703

See Section VI-A for information on exposure limits.

\*Hazardous chemical as defined by OSHA, 29 CFR 1910.1200.

**B. PRECAUTIONARY LABEL STATEMENTS:**

**DANGER! MAY BE FATAL IF INHALED, ABSORBED THROUGH SKIN, OR SWALLOWED  
CAUSES SKIN AND EYE BURNS  
VAPOR EXTREMELY IRRITATING  
COMBUSTIBLE  
MAY CAUSE ALLERGIC SKIN REACTION**

Do not breathe vapor.  
Do not get in eyes, on skin, on clothing.  
Keep container closed.  
Use only with adequate ventilation.  
Keep away from heat and flame.  
Wash thoroughly after handling.

**\*POISON\* CALL A PHYSICIAN IMMEDIATELY**

If swallowed, DO NOT INDUCE VOMITING. If conscious, give one glass of milk or water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. In case of contact, immediately flush eyes and skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

**IN CASE OF FIRE:** Use water spray, dry chemical, "alcohol" foam, CO<sub>2</sub>. Use water spray to keep fire-exposed containers cool.

**IN CASE OF SPILL:** Eliminate all ignition sources. Use water spray to dilute spill to a nonflammable mixture. Flush spill area with water spray. Prevent runoff from entering drains, sewers, and streams.

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Since emptied containers retain product residue, follow label warnings even after container is emptied.

**FOR MANUFACTURING USE ONLY**

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**SECTION III. PHYSICAL DATA (1)**

- Appearance and Odor: A clear colorless liquid; pungent odor.
- Boiling Range: 90-100°C (194-212°F); based on 40% aqueous solution.
- Specific Gravity (H<sub>2</sub>O = 1): 1.19(25/25°C); based on 40% aqueous solution.
- Vapor Pressure: 100 mm Hg at 20°C (68°F); based on 40% aqueous solution.
- Solubility in Water: Complete.

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**SECTION IV. FIRE AND EXPLOSION HAZARD DATA (1)**

- Flash Point: 88°C (190°F), Tag Closed Cup
- Extinguishing Agent: Water spray, dry chemical, "alcohol" foam, or CO<sub>2</sub>.
- Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Use water spray to keep fire-exposed containers cool.
- Unusual Fire and Explosions Hazards: None

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**SECTION V. REACTIVITY DATA**

- Stability: Not fully evaluated.

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**SECTION VI. TOXICITY AND HEALTH**

**A. EXPOSURE LIMITS**

- Threshold Limit Value (TLV): 1 ppm-TWA, Ceiling, ACGIH, 1985-86.
- OSHA Permissible Exposure Limit (PEL): 1 ppm-TWA, Ceiling Concentration.
- A NIOSH industrial hygiene analytical method is available. (2)

**B. EXPOSURE EFFECTS**

Inhalation: May be fatal if inhaled. Vapor causes severe upper respiratory tract irritation.

**Eyes:** Causes burns.

**Skin:** May be fatal if absorbed through the skin. Causes burns. May cause allergic skin reaction.

#### C. FIRST AID

**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 immediately.

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. If breathing is difficult, give oxygen. Call a physician immediately.

**Eyes:** Immediately flush with plenty of water for at least 15 min. Call a physician immediately.

**Skin:** Immediately flush with plenty of water for at least 15 min while removing contaminated clothing and shoes. Call a physician immediately. Wash clothing before reuse. Destroy contaminated shoes.

#### D. TOXICITY DATA

Test	Species	Result	Acute Toxicity Classification (3)
Acute oral LD <sub>50</sub>	Rat	23 mg/kg (4)	Highly toxic
Acute oral LD <sub>50</sub>	Rat	50-400 mg/kg (5)	Moderately toxic
Acute oral LD <sub>50</sub>	Mouse	21 mg/kg (4)	
Dermal LD <sub>50</sub>	Rabbit	67 mg/kg (4)	Moderately toxic
Dermal LD <sub>50</sub>	Guinea pig	0.1-1.0 mL/kg (5)	
Skin irritation	Rabbit	Severe (6)	
Skin irritation	Guinea pig	Moderate (5)	
Eye irritation	Rabbit	Severe (6)	

Chloroacetaldehyde vapor is very irritating to the eyes, nose and throat, with effects possibly being delayed for several days following exposure. Dilute aqueous solutions of this material as low as 0.5% are capable of causing appreciable irritation. Stronger solutions are likely to be corrosive to the skin and cause permanent impairment of vision following direct contact with the eye. (4)

Mice exposed to a 45% equilibrium of chamber air and air bubbled through a 30% aqueous solution for 2.6 min showed 50% mortality (number of test animals not given). Although a specific concentration was not given, the investigators found the material to be "very lethal". (7)

Rats, guinea pigs, rabbits, and mice were exposed to an airborne concentration of 1.6 ppm of the material 7h/day, 5 days/wk for 6 mo. No adverse effects were noted in growth, mortality, hematology, organs weights, and gross or histopathology. (4)

Rats exposed to 5 ppm of the material (time unspecified) showed eye and nasal irritation and slight growth retardation in the males only. (4)

## SECTION VII. VENTILATION AND PERSONAL PROTECTION

### A. VENTILATION

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Normally, local exhaust ventilation or an enclosed handling system will be needed to control air contamination below recommended exposure limits (see Section VI-A).

### B. RESPIRATORY PROTECTION

An appropriate full-face NIOSH-approved respirator for organic vapor must be worn if exposure is likely to exceed recommended exposure limits (see Section VI-A). If respirators are used, a program should be established to assure compliance with OSHA Standard 29 CFR 1910.134.

### C. SKIN AND EYE PROTECTION

A hooded respirator and full, impermeable protective suit should be worn to prevent skin contact. Impermeable gloves should be worn. A safety shower, an eye bath, and washing facilities should be available. Wash thoroughly after handling.

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## SECTION VIII. SPECIAL STORAGE AND HANDLING PRECAUTIONS

Material is classified as a Combustible Liquid. Keep away from heat and flame. Since emptied containers retain product residue, follow label warnings even after container is emptied.

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## SECTION IX. SPILL, LEAK, AND DISPOSAL PRACTICES

Steps to be Taken in Case Material is Released or Spilled: Eliminate all ignition sources. Small spills may be collected with absorbent materials. For large spills, use water spray to dilute spill to a noncombustible mixture. Prevent runoff from entering drains, sewers, or streams. Superfund reportable quantity (RQ): 1,000 lbs.

Waste Disposal Method: Incineration. Observe all federal, state, and local laws concerning health and environment. RCRA code number: P023.

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## SECTION X. ENVIRONMENTAL EFFECTS DATA

A. SUMMARY: Limited aquatic data for this material (8) have been used to evaluate the following properties and provide the following estimate of environmental impact: this material has a high potential to affect some aquatic organisms. The direct, instantaneous discharge to a receiving body of water of an amount of this material which will rapidly produce by dilution a final concentration of 0.15 mg/L or less is not expected to cause adverse environmental effects.

### B. ACUTE AQUATIC EFFECTS

-- 96-h LC<sub>50</sub>; Harpacticoid copepod (Nitocra spinipes): 1.5 mg/L  
(1.2-1.8) (8) <sub>a</sub>

A Numbers in parenthesis are the 95% confidence limits.

## SECTION XI. TRANSPORTATION

DOT Hazard Classification: Corrosive material.  
Proper DOT Shipping Name: Corrosive liquid, poisonous, n.o.s.  
(chloroacetaldehyde).

UN Number: 2922.

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## SECTION XII. REFERENCES

1. File data, Toxicology and Chemical Safety Services, Eastman Chemicals Division, Eastman Kodak Company, Kingsport, Tennessee.
2. NIOSH MANUAL OF ANALYTICAL METHODS, 3rd Edition. Issued by the National Institute for Occupational Safety and Health. U.S. Government Printing Office, Washington, 1984, Method S11.
3. AM IND HYG ASSOC Q 10, 93-96 (1949).
4. DOCUMENTATION OF THE THRESHOLD LIMIT VALUES, 4th Edition. American Conference of Governmental Industrial Hygienists, Cincinnati, 1980, p. 82.
5. Unpublished data, Health and Environment Laboratories, Eastman Kodak Company, Rochester, New York.
6. G. D. Clayton and F. E. Clayton, Editors. PATTY'S INDUSTRIAL HYGIENE AND TOXICOLOGY, 3rd Revised Edition, Volume 2A. Wiley-Interscience, New York, 1981, p. 2641.
7. J PHARM SCI 61, 19-25 (1972).
8. MAR POLLUT BULL 14, 213-214 (1983).

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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 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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