

MATERIAL SAFETY DATA SHEET

200000569/F/USA
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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: KODAK Fixer

Catalog Number(s): 123 4699 - To Make 32 ounce(s)
 123 8146 - To Make 128 ounce(s)
 197 1720 - To Make 1 quart (U.S.)
 197 1738 - To Make 1/2 gallon (U.S.)
 197 1746 - To Make 1 gallon (U.S.)
 197 1753 - To Make 5 gallons (U.S.)

Manufacturer/Supplier: EASTMAN KODAK COMPANY, Rochester, New York 14650

For Emergency Health, Safety & Environmental Information, call (716)
722-5151

For other information or to request an MSDS, call (800) 242-2424.

Synonym(s): Concentrate: KAN 354617; PCD 6010; D-0006.000
 Working solution: KAN 965822

2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry No.)

Concentrate:

70-75 Sodium thiosulfate (007772-98-7)
10-15 Ammonium alum, dodecahydrate (007784-25-0)
5-10 Sodium acetate (000127-09-3)
5-10 Sodium metabisulfite (007681-57-4)
1-5 Boric anhydride (001303-86-2)

Working solution:

75-80 Water (007732-18-5)
10-15 Sodium thiosulfate (007772-98-7)
1-5 Ammonium alum, dodecahydrate (007784-25-0)
1-5 Sodium acetate (000127-09-3)
1-5 Sodium bisulfite (007631-90-5)

3. HAZARDS IDENTIFICATION

Concentrate:

CONTAINS: sodium metabisulfite (007681-57-4)
WARNING!

REDUCING AGENT
MAY BE HARMFUL IF INHALED OR SWALLOWED
MAY LIBERATE SULFUR DIOXIDE
DUST IRRITATING TO RESPIRATORY TRACT
CAUSES EYE IRRITATION
POWDERED MATERIAL MAY FORM EXPLOSIVE DUST-AIR MIXTURES

HMIS Hazard Ratings:
Health - 1 , Flammability - 1, Reactivity - 0, Personal Protection -
B

NFPA Hazard Ratings:
Health - 2, Flammability - 1, Reactivity (Stability) - 0

Working solution:

CONTAINS: sodium bisulfite (007631-90-5)
WARNING!
MAY BE HARMFUL IF INHALED OR SWALLOWED

HMIS Hazard Ratings:
Health - 0 , Flammability - 1, Reactivity - 0, Personal Protection -
B

NFPA Hazard Ratings:
Health - 1, Flammability - 1, Reactivity (Stability) - 0

NOTE: HMIS and NFPA hazard indexes involve data review and interpretation that may vary among companies. They are intended only for rapid, general identification of the magnitude of the potential hazards. The personal protection index is only intended for general guidance on personal protection equipment (PPE) that is suitable for the potential hazards of the material. PPE (e.g., respirators) may not be needed if engineering controls (e.g., local ventilation) are adequate. An asterisk (*), in the HMIS health field, designates potential chronic or target organ hazards. To adequately address safe handling, ALL information in this MSDS must be considered.

4. FIRST-AID MEASURES

Inhalation: If symptomatic, move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.

Eyes:

Concentrate: Immediately flush with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

Working solution: Any material that contacts the eye should be washed out immediately with water. Get medical attention if symptoms occur.

Skin: Wash with soap and water. Get medical attention if symptoms occur.

Ingestion: Drink 1-2 glasses of water. Seek medical attention. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Extinguishing Media:

Concentrate: Flood with water.

Working solution: Water spray, carbon dioxide (CO₂), dry chemical, alcohol foam

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Fire or excessive heat may produce hazardous decomposition products.

Hazardous Combustion Products:

Concentrate: Carbon dioxide, carbon monoxide, oxides of sulfur, oxides of nitrogen (see also Hazardous Decomposition Products section)

Working solution: Carbon dioxide, carbon monoxide, oxides of sulfur (see also Hazardous Decomposition Products section)

Unusual Fire and Explosion Hazards:

Concentrate: Powdered material may form explosive dust-air mixtures. Reducing agent. Greatly increases the burning rate of combustible materials.

Working solution: Dried product residue can act as a reducing agent.

6. ACCIDENTAL RELEASE MEASURES

Concentrate: Flush to sewer with large amounts of water. Otherwise, sweep up and place in a container for chemical waste. Collect in a noncombustible container for prompt disposal. Clean surface thoroughly to remove residual contamination.

Working solution: Flush to sewer with large amounts of water. Clean surface thoroughly to remove residual contamination.

7. HANDLING AND STORAGE

Personal Precautionary Measures: Avoid breathing dust or vapor. Avoid contact with eyes and prolonged or repeated contact with skin. Use with adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion:

Concentrate: Powdered material may form explosive dust-air mixtures. Minimize dust generation and accumulation. Use with adequate ventilation.

Keep away from sources of ignition. Refer to NFPA Pamphlet No. 654, "Prevention of Fire and Dust Explosions in the Chemical, Dye, Pharmaceutical, and Plastics Industries." Keep from contact with oxidizing materials, highly oxygenated or halogenated solvents, organic compounds containing reducible functional groups, or aqueous ammonia. Keep away from combustible material. Remove and wash contaminated clothing promptly.

Working solution: Keep from contact with oxidizing materials.

Storage:

Concentrate: Keep container tightly closed. Keep away from incompatible substances (see Incompatibility section). Do not store or ship together with combustible materials. Store in original container.

Working solution: Keep container tightly closed. Keep away from incompatible substances (see Incompatibility section).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

ACGIH Threshold Limit Value (TLV):

Ammonium alum, dodecahydrate: 2 mg/m³ TWA, as Al soluble salts
Boric anhydride: 10 mg/m³ TWA
Sodium metabisulfite: 5 mg/m³ TWA
Sodium bisulfite: 5 mg/m³ TWA
Sulfur dioxide: 2 ppm TWA; 5 ppm STEL

OSHA (USA) Permissible Exposure Limit (PEL - 1971 Table Z-1 Values):

Boric anhydride: 15 mg/m³ TWA, total dust

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

Respiratory Protection:

Concentrate: If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn.

Respirator type: Dust. A respirator should be worn if hazardous decomposition products are likely to be or have been released.

Respirator

type: Acid gas. See Stability and Reactivity Section. If respirators are used, a program should be instituted to assure compliance with OSHA Standard 29 CFR 1910.134.

Working solution: None should be needed. A respirator should be worn if hazardous decomposition products are likely to be or have been released.

Respirator type: Acid gas. See Stability and Reactivity Section. If respirators are used, a program should be instituted to assure compliance with OSHA Standard 29 CFR 1910.134.

Eye Protection: Wear safety glasses with side shields (or goggles).

Skin Protection: It is a good industrial hygiene practice to minimize skin contact. For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.

Recommended Decontamination Facilities: Eye bath, washing facilities, safety shower

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form:

Concentrate: Solid (powder)

Working solution: Liquid

Color:

Concentrate: White

Working solution: Colorless

Odor: Odorless
Specific Gravity (water = 1):
 Concentrate: Not available
 Working solution: > 1.00
Vapor Pressure at 20°C (68°F):
 Concentrate: Negligible
 Working solution: 24 mbar (18 mm Hg)
Vapor Density (Air = 1):
 Concentrate: Not applicable
 Working solution: 0.6
Volatile Fraction by Weight:
 Concentrate: Negligible
 Working solution: 80-85%
Boiling Point:
 Concentrate: Not applicable
 Working solution: >100°C (>212°F)
Melting Point:
 Concentrate: Not available
 Working solution: Not applicable
Solubility in Water:
 Concentrate: Appreciable
 Working solution: Complete
pH:
 Concentrate: Not applicable
 Working solution: 4.2-4.6
Flash Point:
 Concentrate: Not applicable, combustible solid
 Working solution: None

10. STABILITY AND REACTIVITY

Stability: Stable

Incompatibility:

 Concentrate: Strong oxidizing agents, strong acids, bases, sodium hypochlorite (bleach), combustible material, halogenated materials, aqueous ammonia

 Working solution: Strong oxidizing agents, strong acids, bases, sodium hypochlorite (bleach)

Hazardous Decomposition Products: Ammonia, chloramine

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Effects of Exposure:

 Inhalation:

Concentrate: May cause irritation to the mucous membranes and upper respiratory tract. May be harmful if inhaled. In contact with strong acids or if heated, sulfites may liberate sulfur dioxide gas. Sulfur dioxide gas is irritating to the respiratory tract. Some asthmatics or hypersensitive individuals may experience difficult breathing.

Working solution: Expected to be a low hazard for usual industrial or commercial handling by trained personnel. In contact with strong acids or if heated, sulfites may liberate sulfur dioxide gas. Sulfur dioxide gas is irritating to the respiratory tract. Some asthmatics or hypersensitive individuals may experience difficult breathing.

Eyes:

Concentrate: Causes irritation.

Working solution: Expected to be a low hazard for usual industrial or commercial handling by trained personnel.

Skin: This material has a low potential to cause allergic skin reactions; however, cases of human skin sensitization have been reported.

Ingestion:

Concentrate: May be harmful if swallowed. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea. May cause irritation of the gastrointestinal tract if swallowed.

Working solution: May be harmful if swallowed. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea.

12. ECOLOGICAL INFORMATION

Introduction: This environmental effects summary is written to assist in addressing emergencies created by an accidental spill which might occur during the shipment of this material, and, in general, it is not meant to address discharges to sanitary sewers or publically owned treatment works.

Summary: Data for the major components of this material have been used to estimate the environmental impact of this material. This material forms a moderately acidic aqueous solution, and this property may cause adverse environmental effects. However, this material, itself, has not been tested for environmental effects.

It is expected to have the following properties: a moderate biochemical oxygen demand and may cause oxygen depletion in aqueous systems, a low potential to affect aquatic organisms, a low potential to affect secondary waste treatment microbial metabolism, a low potential to affect the germination and/or early growth of some plants, a low potential to persist in the environment, a low potential to bioconcentrate. After dilution with a large amount of water, followed by secondary waste treatment, this material is not expected to cause adverse environmental effects.

13. DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or local laws. Flush to sewer with large amounts of water.

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

14. TRANSPORT INFORMATION

For transportation information regarding this product call the Kodak Worldwide Transportation Hazmat Hot Line: (716) 722-2400 between 8 a.m. and 5 p.m. (Eastern Standard Time), Monday through Friday.

15. REGULATORY INFORMATION

- Material(s) known to the State of California to cause cancer: None
- Material(s) known to the State of California to cause adverse reproductive effects: None

Carcinogenicity Classification (components present at 0.1% or more):
- International Agency for Research on Cancer (IARC): None

- American Conference of Governmental Industrial Hygienists (ACGIH):
None
- National Toxicology Program (NTP): None
- Occupational Safety and Health Administration (OSHA): None

- Chemical(s) subject to the reporting requirements of Section 313 or
Title
III of the Superfund Amendments and Reauthorization Act (SARA) of
1986 and
40 CFR Part 372: None

16. OTHER INFORMATION

US/Canadian Label Statements:

Concentrate:

CONTAINS: Sodium metabisulfite (007681-57-4)

WARNING!
REDUCING AGENT
MAY BE HARMFUL IF INHALED OR SWALLOWED
MAY LIBERATE SULFUR DIOXIDE
DUST IRRITATING TO RESPIRATORY TRACT
CAUSES EYE IRRITATION

Keep container tightly closed.
Keep from contact with clothing and other combustible materials.

Remove

and wash contaminated clothing promptly.
Avoid breathing dust.

Avoid contact with eyes and prolonged or repeated contact with
skin.

Use with adequate ventilation.
Wash thoroughly after handling.

FIRST AID: If swallowed, seek medical advice. Never give anything
by mouth

to an unconscious person. If inhaled, move to fresh air. Treat
symptomatically. In case of eye contact, immediately flush eyes
with
plenty of water for at least 15 minutes. Get medical attention if
symptoms
occur.

Keep out of reach of children.

For additional information, see Material Safety Data Sheet (MSDS)
for this
material.

Additional hazard precautions for containers greater than 1 gallon
of
liquid or 5 pounds of solid:

POWDERED MATERIAL MAY FORM EXPLOSIVE DUST-AIR MIXTURES

Minimize dust generation and accumulation.

IN CASE OF FIRE: Flood with water.

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

Working solution:

CONTAINS: Sodium bisulfite (007631-90-5)

WARNING!
MAY BE HARMFUL IF INHALED OR SWALLOWED

Avoid contact with eyes and prolonged or repeated contact with skin.

Avoid breathing mist or vapor.
Use with adequate ventilation.
Wash thoroughly after handling.

FIRST AID: If swallowed, seek medical advice. Never give anything by mouth to an unconscious person.

Keep out of reach of children.

For additional information, see Material Safety Data Sheet (MSDS) for this material.

Additional hazard precautions for containers greater than 1 gallon of liquid or 5 pounds of solid:

IN CASE OF FIRE: Use water spray, carbon dioxide (CO2), dry chemical, alcohol foam.

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 and the protection of the environment.

R-1, S-1, F-1, C-1

WS:R-1, S-1, F-1, C-0