

MATERIAL SAFETY DATA SHEET

200001270/F/USA
Approval Date: 01/22/2002
Print Date: 02/22/2004
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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: KODAK Fixer and Replenisher, Process E-6 and Process E-6AR

Catalog Number(s): 121 3677 - To Make 5 gallons (U.S.) AR
 123 7619 - To Make 25 gallons (U.S.)

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

For Emergency Health, Safety & Environmental Information, call (585) 722-5151

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

Synonym(s): Concentrate: KAN 365790; PCD 4510; N-0018.000
 Working solution: KAN 444061; N-0018.500

2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry No.)

Concentrate:

52 Ammonium thiosulfate (007783-18-8)
30-40 Water (007732-18-5)
4 Ammonium sulfite (010196-04-0)
1-5 Sodium bisulfite (007631-90-5)
1-5 Sodium sulfite (007757-83-7)
< 1 Ethylenediaminetetraacetic acid (000060-00-4)

Working solution:

90-95 Water (007732-18-5)
5-10 Ammonium thiosulfate (007783-18-8)
< 1 Ammonium sulfite (010196-04-0)
< 1 Sodium bisulfite (007631-90-5)
< 1 Sodium sulfite (007757-83-7)
< 1 Ethylenediaminetetraacetic acid (000060-00-4)

3. HAZARDS IDENTIFICATION

Concentrate:

CONTAINS: Ammonium sulfite (010196-04-0); Sodium bisulfite (007631-90-5);
Sodium sulfite (007757-83-7); Ammonium thiosulfate (007783-18-8)

WARNING!

MAY BE HARMFUL IF SWALLOWED
CAUSES EYE IRRITATION
DRIED PRODUCT RESIDUE CAN ACT AS A REDUCING AGENT. DRYING ON CLOTHING OR
OTHER MATERIALS MAY CAUSE FIRE.

HMIS Hazard Ratings:

Health - 2, Flammability - 1, Reactivity - 0, Personal Protection - B

NFPA Hazard Ratings:

Health - 1, Flammability - 1, Reactivity (Stability) - 0

Working solution:

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CONTAINS: Ammonium sulfite (010196-04-0); Sodium bisulfite (007631-90-5);
Sodium sulfite (007757-83-7)

WARNING!
MAY BE HARMFUL IF SWALLOWED

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

NFPA Hazard Ratings:
Health - 1, Flammability - 0, 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: Use appropriate agent for adjacent fire.

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: Oxides of nitrogen, oxides of sulfur (see also Hazardous Decomposition Products section)

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Working solution: None (noncombustible); (see also Hazardous Decomposition Products section)

Unusual Fire and Explosion Hazards:

Concentrate: Solution contains a strong reducing agent. Dried product residue can act as a reducing agent.

Working solution: None

6. ACCIDENTAL RELEASE MEASURES

Flush to sewer with large amounts of water. Otherwise, absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination.

Concentrate: Collect in a noncombustible container for prompt disposal.

7. HANDLING AND STORAGE

Personal Precautionary Measures: Avoid breathing mist 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: Keep away from combustible material. Remove and wash contaminated clothing promptly. Keep from contact with oxidizing materials, highly oxygenated or halogenated solvents, organic compounds containing reducible functional groups.

Working solution: Keep from contact with oxidizing materials, highly oxygenated or halogenated solvents, organic compounds containing reducible functional groups.

Storage:

Concentrate: Keep container tightly closed to prevent the loss of water. 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):

Sodium bisulfite: 5 mg/m³ TWA

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions.

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Respiratory Protection: 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:

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

Working solution: It is a good industrial hygiene practice to minimize eye contact. 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, safety shower, washing facilities

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid

Color: Clear, Colorless

Odor: Odorless

Specific Gravity (water = 1):

Concentrate: 1.37

Working solution: 1.03-1.09

Vapor Pressure at 20°C (68°F): 24 mbar (18 mm Hg)

Vapor Density (Air = 1): 0.6

Volatile Fraction by Weight:

Concentrate: 30-40%

Working solution: 90-95%

Boiling Point: >100°C (>212°F)

Solubility in Water: Complete

pH:

Concentrate: 6.2

Working solution: 6.3-6.7

Flash Point:

Concentrate: None

Working solution: None, noncombustible liquid

10. STABILITY AND REACTIVITY

Stability: Stable

Incompatibility:

Concentrate: Combustible material, halogenated materials, strong acids, bases, sodium hypochlorite (bleach), strong oxidizing agents. Contact with base liberates flammable material.

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

Hazardous Decomposition Products:

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Concentrate: Ammonia, sulfur dioxide, chloramine

Working solution: Ammonia, chloramine, nitrogen oxides (NOx), sulfur dioxide

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Effects of Exposure:

Inhalation: Expected to be a low hazard for recommended handling. 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: No specific hazard known. May cause transient irritation.

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

Ingestion: 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

The following properties are ESTIMATED from the components of the preparations.

	Concentrate	Working Solution
Potential Toxicity		
Fish LC50 mg/l:	>100	>100
Daphnid EC50 mg/l:	>100	>100
Algal IC50 mg/l:	>100	>100
Organics Readily Degradable (>70%):	No	No
Potential Bioaccumulation:	Log Pow <1	Log Pow <1
COD (approximate g/l):	327	38
BOD5 (approximate g/l):	267	31
Potential Toxicity Waste treatment microorganisms EC50 (mg/l):	>100	>100

13. DISPOSAL CONSIDERATIONS

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Discharge, treatment, or disposal may be subject to national, state, or local laws. Consult state or local regulatory authorities before flushing 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: (585) 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): Sulfur dioxide, some sulfites, bisulfites and metasulfites, Group 3; Not classifiable.
 - American Conference of Governmental Industrial Hygienists (ACGIH): Sodium bisulfite, A4; Not classifiable as a human carcinogen.
 - 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: Ammonium thiosulfate; Ammonium sulfite, as sources of aqueous ammonia.

16. OTHER INFORMATION

US/Canadian Label Statements:

Concentrate:

CONTAINS: Ammonium sulfite (010196-04-0); Sodium bisulfite (007631-90-5); Sodium sulfite (007757-83-7); Ammonium thiosulfate (007783-18-8)

WARNING!

DRIED PRODUCT RESIDUE CAN ACT AS A REDUCING AGENT. DRYING ON CLOTHING OR OTHER MATERIALS MAY CAUSE FIRE.

MAY BE HARMFUL IF SWALLOWED

CAUSES EYE IRRITATION

Keep container tightly closed to prevent the loss of water.

Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly.

Avoid breathing mist or vapor.

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

Use with adequate ventilation.

Wash thoroughly after handling.

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

IN CASE OF FIRE: Flood with water.

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

Working solution:

CONTAINS: Ammonium sulfite (010196-04-0); Sodium bisulfite (007631-90-5); Sodium sulfite (007757-83-7)

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

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

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-2, F-1, C-1

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