

MATERIAL SAFETY DATA SHEET

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1. Identification of the substance/preparation and of the company/undertaking

Product name: KODAK Fixer, Working solution

Product code: 1238146 - Working solution

Manufacturer: EASTMAN KODAK COMPANY, 343 State Street, Rochester, New York, 14650

Supplier: EASTMAN KODAK COMPANY, 343 State Street, Rochester, New York, 14650

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

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

Synonyms: None.

2. Hazards identification

CONTAINS: Sodium thiosulphate (7772-98-7), Ammonium alum, dodecahydrate (7784-26-1), Sodium bisulphite (7631-90-5)

WARNING!

MAY BE HARMFUL IF SWALLOWED.

MAY LIBERATE SULFUR DIOXIDE

DRIED PRODUCT RESIDUE CAN ACT AS A REDUCING AGENT.

HMIS II Hazard Ratings:

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

NFPA Hazard Ratings:

Health - 2, Flammability - 1, Instability - 0

NOTE: HMIS II 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. An asterisk (*), in the HMIS II health field, designates potential chronic or target organ hazards. To adequately address safe handling, ALL information in this MSDS must be considered.

3. Composition/information on ingredients

Weight %	Components (CAS-No.)
80 - 85	Water (7732-18-5)
10 - 15	Sodium thiosulphate (7772-98-7)
1 - 5	Ammonium alum, dodecahydrate (7784-26-1)
1 - 5	Sodium acetate (127-09-3)
1 - 5	Sodium bisulphite (7631-90-5)

4. First aid measures

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

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

Skin: Wash off 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: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Flush with plenty of water.

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

Hazardous Combustion Products: Carbon oxides, nitrogen oxides (NOx), sulfur oxides (see also Hazardous Decomposition Products section).

Unusual Fire and Explosion Hazards: Dried product residue can act as a reducing agent. May cause spontaneous heating and ignition when absorbed on combustible, porous material (e.g. rags, paper, sawdust, cotton, clothing).

6. Accidental release measures

Methods for cleaning up: Collect in a noncombustible container for prompt disposal.

For Large Spills: Flush with plenty of water.

7. Handling and storage

Personal precautions: Avoid breathing mist or vapour at concentrations greater than the exposure limits. Avoid contact with eyes, skin, and clothing. Ensure adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion: Keep from contact with oxidizing materials, highly oxygenated or halogenated solvents, organic compounds containing reducible functional groups. Remove and wash contaminated clothing promptly.

Storage: Store in original container. Keep container tightly closed to prevent the loss of water. Keep away from incompatible substances (see Incompatibility section.)

8. Exposure controls / personal protection

Occupational exposure controls

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Chemical Name	Regulatory List	Value Type	Value
Sodium bisulphite	ACGIH	Time Weighted Average (TWA):	5 mg/m3
Sulphur dioxide	ACGIH	Time Weighted Average (TWA):	2 ppm
	ACGIH	Short Term Exposure Limit (STEL):	5 ppm
	OSHA Z1	PEL:	5 ppm 13 mg/m3
Ammonium alum, dodecahydrate	ACGIH	Time Weighted Average (TWA):	2 mg/m3

Expressed as Al

Ventilation: Good general ventilation should be used. Ventilation should be sufficient so that applicable occupational exposure limits are not exceeded. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special circumstances.

Respiratory protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. 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 29CFR 1910.134 and 29CFR1910.1048.

Eye protection: It is a good industrial hygiene practice to minimize eye contact. Wear safety glasses with side shields (or goggles).

Skin and body 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: Safety shower, eye wash, washing facilities as appropriate to condition of use.

9. Physical and Chemical Properties

Physical form: liquid

Colour: colourless

Odour: odourless

Specific gravity: > 1

Vapour pressure: 24 mbar (18.0 mm Hg)

Relative vapour density: 0.6

Volatile fraction by weight: 80 - 85 %

Boiling point/range: > 100.0 °C (> 212.0 °F)

Water solubility: complete

pH: 4.2 - 4.6

Flash point: None.

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10. Stability and reactivity

Stability: Stable.

Incompatibility: Acids, halogenated compounds, oxidizing agents, strong bases, sodium hypochlorite (bleach). Contact with sodium hypochlorite (bleach) may form chloramine (toxic gas). Contact with strong acids may liberate sulphur dioxide.

Hazardous decomposition products: sulphur oxides.

Hazardous Polymerization: Hazardous polymerisation does not occur.

11. Toxicological information

Effects of Exposure

General advice:

Contains: Sodium thiosulphate. The toxicological properties of this material have not been fully investigated and its handling and use may present additional hazards. Expected to be a low health hazard for recommended handling.

Inhalation: Expected to be a low hazard for recommended handling. In contact with strong acids or if heated, sulphites may liberate sulphur dioxide gas. Sulphur dioxide gas is irritating to the respiratory tract. Some asthmatics or hypersensitive individuals may experience difficult breathing.

Eyes: 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.

Potential Toxicity:

Fish LC50:	> 100 mg/l
Daphnid EC50:	> 100 mg/l
Algal IC50:	> 100 mg/l
Waste treatment organisms EC50:	> 100 mg/l
Organics Readily Degradable:	Readily biodegradable

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Potential Bioaccumulation: log Pow < 1
COD (approximate): 51 g/l
BOD (approximate): 40 g/l

13. Disposal considerations

Discharge, treatment, or disposal is subject to national, state, provincial, or municipal laws. Consult state or local regulatory authorities before flushing to sewer with large amounts of water. 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. In Canada: General Shipping Information, call: (416) 766-8233.

15. Regulatory information

U.S. California Prop. 65: none

Carcinogenicity Classification (components present at 0.1% or more):

International Agency for Research on Cancer (IARC): Sodium bisulphite: 3 (not classifiable as to carcinogenicity to humans)

American Conference of Governmental Industrial Hygienists (ACGIH): Sodium bisulphite: Group A4 (Not classifiable as a human carcinogen.)

U.S. National Toxicology Program (NTP): none

U.S. Occupational Safety and Health Administration (OSHA): none

Chemical(s) subject to the reporting requirements of U.S. 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:

CONTAINS: Sodium thiosulphate (7772-98-7), Ammonium alum, dodecahydrate (7784-26-1), Sodium bisulphite (7631-90-5)

WARNING!

MAY BE HARMFUL IF SWALLOWED.

MAY LIBERATE SULFUR DIOXIDE

DRIED PRODUCT RESIDUE CAN ACT AS A REDUCING AGENT.

Avoid prolonged or repeated breathing of mist or vapour.

Avoid contact with eyes, skin, and clothing.

Ensure adequate ventilation.

Wash thoroughly after handling.

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Keep container tightly closed to prevent the loss of water.
Keep away from combustible material.
Keep from contact with clothing and other materials. Remove and wash contaminated clothing promptly.

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

Keep out of reach of children.

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

IN CASE OF FIRE: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

IN CASE OF SPILL: Flush with plenty of water.

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. The information relating to the working solution is for guidance purposes only, and is based on correct mixing and use of the product according to instructions.

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