

Material Safety Data Sheet



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

Product name: KODAFIX Solution, Working Solution

Product code: 1464080 - Working Solution

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

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

For further information about this product, call (800) 242-2424.

Synonyms: None.

Product Use: photographic processing chemical (fixer), For industrial use only.

2. Hazards identification

CONTAINS: Ammonium thiosulphate (7783-18-8), Sodium bisulphite (7631-90-5), Ammonium sulphite (10196-04-0)

WARNING!

MAY BE HARMFUL IF SWALLOWED.

DRIED PRODUCT RESIDUE CAN ACT AS A REDUCING AGENT.

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

NFPA Hazard Ratings: Health - 3, Flammability - 1, Instability - 0

NOTE: HMIS III and NFPA 704 (2007) 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. To adequately address safe handling, ALL information in this MSDS must be considered.

3. Composition/information on ingredients

| Weight % | Components - (CAS-No.) |
|-----------|-----------------------------------|
| 10 - 15 | Ammonium thiosulphate (7783-18-8) |
| 1 - 5 | Sodium bisulphite (7631-90-5) |
| 0.1 - < 1 | Ammonium sulphite (10196-04-0) |

4. First aid measures

Inhalation: If symptomatic, move to fresh air. 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.

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

Ingestion: If swallowed, only induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control centre immediately.

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), Sulphur oxides, (see also Hazardous Decomposition Products sections.)

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

6. Accidental release measures

Absorb spill with vermiculite or other inert material. Collect in a noncombustible container for prompt disposal. Clean surface thoroughly to remove residual contamination.

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. Use only with 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

| Chemical Name | Regulatory List | Value Type | Value |
|-------------------|-----------------|--|----------------------------|
| Sodium bisulphite | ACGIH | time weighted average | 5 mg/m3 |
| Sulphur dioxide | OSHA | Short term exposure limit time weighted average | 0.25 ppm 5 ppm 13 mg/m3 |

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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: None should be needed. 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 applicable federal, state, commonwealth, provincial, or local laws and regulations.

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

Hand protection: For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.

9. Physical and chemical properties

Physical form: liquid

Colour: colourless

Odour: ammonia

Specific gravity: > 1.00

Vapour pressure: 24 mbar (18.0 mm Hg)

Vapour density: 0.6

Volatile fraction by weight: 85 - 90 %

Boiling point/boiling range: > 100 °C (> 212.0 °F)

Water solubility: complete

pH: 4.8 - 5.0

Flash point: does not flash

10. Stability and reactivity

Stability: Stable under normal conditions.

Incompatibility: Acids, Strong bases, sodium hypochlorite (bleach), Halogenated compounds, Oxidizing agents. Contact with sodium hypochlorite (bleach) may form chloramine (toxic gas). Contact with strong acids liberates sulphur dioxide.

Hazardous decomposition products: Ammonia, chloramine, nitrogen oxides (NO_x), Sulphur oxides

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Hazardous Polymerization: Hazardous polymerisation does not occur.

11. Toxicological information

Effects of Exposure

Inhalation: Expected to be a low hazard for recommended handling. Some asthmatics or hypersensitive individuals may experience difficulty breathing if exposed to aerosols or decomposition products that are not anticipated during normal use.

Eyes: No specific hazard known. May cause transient irritation.

Skin: Expected to be a low hazard for recommended handling. 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.

Data for Ammonium thiosulphate (CAS 7783-18-8):

Acute Toxicity Data:

Oral LD50 (male rat): 500 - 5,000 mg/kg

- Eye irritation: none

Data for Sodium bisulphite (CAS 7631-90-5):

Acute Toxicity Data:

Oral LD50 (rat): > 1,600 mg/kg

Data for Ammonium sulphite (CAS 10196-04-0):

Acute Toxicity Data:

Oral LD50 (rat): 2,528 mg/kg

- Inhalation LC50 (rat): > 2.46 mg/l / 6 hr
- Dermal LD50 (guinea pig): >1.0 g/kg
- Skin irritation: slight

12. Ecological information

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

Potential Toxicity:

| | |
|-------------------------------------|---------------|
| Toxicity to fish (LC50): | > 100 mg/l |
| Toxicity to daphnia (EC50): | > 100 mg/l |
| Toxicity to algae (IC50): | 10 - 100 mg/l |
| Toxicity to other organisms (EC50): | > 100 mg/l |

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Persistence and degradability: Readily biodegradable.

Chemical Oxygen Demand (COD): ca. 58 g/l

Biochemical Oxygen Demand (BOD): ca. 47 g/l

Not expected to adversely effect aquatic organisms.

13. Disposal considerations

Discharge, treatment, or disposal may be subject to federal, state, commonwealth, provincial, or local laws. Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

Not regulated for all modes of transportation.

For more transportation information, go to: www.kodak.com/go/ship.

15. Regulatory information

Notification status

| Regulatory List | Notification status |
|-----------------|---------------------|
| TSCA | All listed |
| DSL | All listed |
| NDSL | None listed |
| EINECS | All listed |
| ELINCS | None listed |
| NLP | None listed |
| AICS | All listed |
| IECS | All listed |
| ENCS | All listed |
| ECI | All listed |
| NZIoC | All listed |
| PICCS | All listed |

"Not all listed" indicates one or more component is either not on the public Inventory or is subject to exemption requirements. If additional information is needed contact Kodak.

Other regulations

American Conference of Governmental Industrial Hygienists (ACGIH): No component of this product present at levels greater than or equal to

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| | |
|--|---|
| | 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. |
| International Agency for Research on Cancer (IARC): | No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| U.S. National Toxicology Program (NTP): | No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| U.S. Occupational Safety and Health Administration (OSHA): | No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |
| California Prop. 65 | This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects. |
| U.S. - CERCLA/SARA (40 CFR § 302.4 Designation of hazardous substances): | Sodium bisulphite |
| U.S. - CERCLA/SARA - Section 302 (40 CFR § 355 Appendices A and B - The List of Extremely Hazardous Substances and Their Threshold Planning Quantities): | No components of this product are subject to the SARA Section 302 (40 CFR 355) reporting requirements. |
| U.S. - CERCLA/SARA - Section 313 (40 CFR § 372.65 Toxic Chemical Release Reporting): | Ammonium thiosulphate |
| U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances: | Sodium bisulphite |
| U.S. - California - 8 CCR Section 5200-5220 - Specifically Regulated Carcinogens: | No components found on the California Specifically Regulated Carcinogens List. |
| U.S. - California - 8 CCR Section 5203 Carcinogens: | No components found on the California Section 5203 Carcinogens List. |
| U.S. - California - 8 CCR Section 5209 Carcinogens: | No components found on the California Section 5209 Carcinogens List. |
| U.S. - Massachusetts - General Law Chapter 111F (MGL c 111F) - Hazardous Substances Disclosure by Employers (a.k.a. Right to Know Law): | Sodium bisulphite, Ammonium thiosulphate |
| U.S. - Minnesota Employee Right-to-Know (5206.0400, Subpart 5. List of Hazardous Substances): | Sodium bisulphite |
| U.S. - New Jersey - Worker and Community Right to Know Act (N.J.S.A. 34:5A-1): | Sodium bisulphite |
| U.S. - Pennsylvania - Part XIII. Worker and Community | Aluminium sulphate, Ammonium |

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Right-to-Know Act (Chapters 301-323):

sulphite, Acetic acid, Sodium bisulphite, Water, Ammonium thiosulphate

U.S. - Rhode Island - Title 28 Labor and Labor Relations (Chapters 28-21 Hazardous Substance Right-to-Know Act):

Sodium bisulphite

16. Other information

The data below reflects current legislative requirements whereas the product in your possession may carry a different version of the label depending on the date of manufacture.

US/Canadian Label Statements:

KODAFIX Solution, Working Solution

CONTAINS: Ammonium thiosulphate (7783-18-8), Sodium bisulphite (7631-90-5), Ammonium sulphite (10196-04-0).

WARNING! MAY BE HARMFUL IF SWALLOWED.. DRIED PRODUCT RESIDUE CAN ACT AS A REDUCING AGENT..

Avoid breathing mist or vapour at concentrations greater than the exposure limits. Avoid contact with eyes, skin, and clothing. Keep container tightly closed to prevent the loss of water. Keep from contact with clothing and other materials. Remove and wash contaminated clothing promptly. Use only with adequate ventilation. Wash thoroughly after handling. **FIRST AID:** If symptomatic, move to fresh air. Any material that contacts the eye should be washed out immediately with water. Wash off with soap and water. Get medical attention if symptoms occur. If swallowed, only induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control centre immediately. Keep out of reach of children. Do not handle or use until safety precautions in Material Safety Data Sheet (MSDS) have been read and understood. 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. Flush with plenty of water. **IN CASE OF SPILL:** Absorb spill with vermiculite or other inert material. Collect in a noncombustible container for prompt disposal. Clean surface thoroughly to remove residual contamination. For Large Spills: Flush with plenty of water. Additional Components Include: Water (7732-18-5), Sodium acetate (127-09-3).

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