

**MATERIAL SAFETY DATA SHEET**

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Version 3

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**Product name:** KODAK X-OMAT MX Fixer and Replenisher, Working solution

**Product code:** 1241355WS

**Supplier** Carestream Health, Inc., 150 Verona Street, Rochester, New York 14608

For Emergency Health Information call: 800-424-9300

For other information contact: 800-328-2910

**Product Use:** Photographic chemical.

2. HAZARDS IDENTIFICATION

**Warning!**

**Emergency Overview**

May be harmful if swallowed  
Mist or aerosol may be irritating to eyes, nose, throat, and lungs

**Physical state** liquid

**Odor** No information available

**Color** colorless

**HMIS**

**Health Hazard** - 1

**Flammability** - 1

**Physical - 0  
Hazard**

**Potential Health Effects**

**Eyes**

May cause irritation.

**Skin**

Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

**Inhalation**

Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea. Contact with strong acids liberates sulfur dioxide. May cause irritation of respiratory tract.

**Ingestion**

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

**Chronic Effects**

**Chronic toxicity**

Repeated inhalation of vapors may cause irritation of respiratory tract or bronchitis.

**Aggravated Medical Conditions**

None known.

**Environmental hazard**

See Section 12 for additional Ecological Information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous

Chemical Name	CAS-No	Weight %
Ammonium thiosulfate	7783-18-8	5-10

Aluminum sulfate	10043-01-3	0.1-1
Ammonium sulfite	10196-04-0	0.1-1
Acetic acid	64-19-7	0.1-1
Sodium bisulfite	7631-90-5	0.1-1
Sulfuric acid	7664-93-9	0.1-1
Non-Hazardous		
<b>Chemical Name</b>	<b>CAS-No</b>	<b>Weight %</b>
Water	7732-18-5	>80
Sodium thiosulfate	7772-98-7	1-5

**4. FIRST AID MEASURES**

<b>General advice</b>	IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately if symptoms occur.
<b>Skin contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. Get medical attention immediately if symptoms occur.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.
<b>Ingestion</b>	If swallowed, call a poison control center or doctor immediately. Do not induce vomiting without medical advice. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person.
<b>Notes to physician</b>	Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

<b>Flash point:</b>	Does not flash
<b>Suitable Extinguishing Media</b>	Use CO2, dry chemical, or foam.
<b>Unsuitable Extinguishing Media</b>	Do not use a solid water stream as it may scatter and spread fire.
<b>Hazardous Combustion Products</b>	Carbon oxides, Nitrogen oxides (NOx), Sulfur oxides.

**Specific hazards arising from the chemical**  
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).

**Protective Equipment and Precautions for Firefighters**  
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**                      **Health Hazard - 3**                      **Flammability - 1**                      **Stability - 0**

**6. ACCIDENTAL RELEASE MEASURES**

<b>Personal precautions</b>	Ensure adequate ventilation. For personal protection see section 8.
<b>Methods for Containment</b>	Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

**Other information** See Section 12 for additional information.

7. HANDLING AND STORAGE

**Advice on safe handling** Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Ensure adequate ventilation. Wash thoroughly after handling.

**Technical measures/Storage conditions** Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Guidelines**

Chemical Name	ACGIH TLV	AIHA - Workplace Environmental Exposure Levels (WEELs) - TWAs	OSHA PEL	Advisory OEL
Acetic acid 64-19-7	STEL 15 ppm TWA: 10 ppm		TWA: 10 ppm TWA: 25 mg/m <sup>3</sup>	
Sodium bisulfite 7631-90-5	TWA: 5 mg/m <sup>3</sup>			
Sulfuric acid 7664-93-9	TWA: 0.2 mg/m <sup>3</sup>		TWA: 1 mg/m <sup>3</sup>	

**Occupational Exposure Controls**

**Engineering Measures** Ensure adequate ventilation. Apply technical measures to comply with the occupational exposure limits.

**Personal Protective Equipment**

**General Information** These recommendations apply to the product as supplied.

**Respiratory protection** Use only with adequate ventilation. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

**Eye/Face Protection** Safety glasses with side-shields. If splashes are likely to occur, wear:: Goggles.

**Skin and body protection** Wear suitable protective clothing.

**Hand Protection** Impervious gloves.

**Other Protective Equipment** Ensure that eyewash stations and safety showers are close to the workstation location.

9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical state** liquid

**ph** 4.2

**Flash point:** Does not flash

**Boiling point/boiling range** > 100 °C

**Vapor Pressure** 24 mbar @ 20 °C

**Vapor density** 0.6

**Odor** No information available

**Color** colorless

**Autoignition temperature:** No information available

**Density** No information available  
**Water Solubility** completely soluble  
**Melting point/range:** No information available  
**Specific Gravity** 1.08  
**Bulk Density:** No information available

10. STABILITY AND REACTIVITY

**Stability** Stable under normal conditions.

**Incompatible products** Acids. Strong bases. Oxidizing agents. Halogenated compounds. Contact with strong acids liberates sulfur dioxide.

**Conditions to Avoid** Heat, flames and sparks. Take precautionary measures against static discharges.

**Hazardous Decomposition Products** Ammonia. Chloramine. Sulfur oxides. Nitrogen oxides (NOx).

**Hazardous Polymerization** Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity - Product Information

**Skin** Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

**Eyes** May cause irritation.

**Inhalation** Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea. Contact with strong acids liberates sulfur dioxide. May cause irritation of respiratory tract.

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

Acute toxicity - Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	90,000 mg/kg ( Rat )		
Ammonium thiosulfate	> 2000 mg/kg ( Rat )		
Sodium thiosulfate	5000 mg/kg ( Rat )		
Aluminum sulfate	> 5000 mg/kg ( Rat )		
Ammonium sulfite	2500 mg/kg (Rat)		
Acetic acid	3310 mg/kg ( Rat )	1060 mg/kg ( Rabbit )	11.4 mg/L ( Rat ) 4 h
Sodium bisulfite	1420 mg/kg ( Rat )		
Sulfuric acid	2140 mg/kg ( Rat )		347 ppm ( Rat ) 1 h 510 mg/m <sup>3</sup> ( Rat ) 2 h
Chemical Name	Other applicable information		
Ammonium thiosulfate	No skin irritation		
	No eye irritation		
Sodium thiosulfate	Mild skin irritation		

Aluminum sulfate	Severe eye irritation  No skin irritation  Cell transformation assay: negative  Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea
Acetic acid	Severe eye irritation Severe skin irritation Acute overexposure to extremely high airborne concentrations of respiratory irritants has been associated with development of an asthma-like reactive airways syndrome (RADS) in susceptible individuals. Extremely high airborne concentrations are not generated during normal conditions of use but may occur following a spill. The potential to generate extremely high airborne concentrations in a spill situation depends upon physical factors such as the concentration of the solution, the volume of the spill, the surface area of the spill, the size of the room where the spill occurred, and the ventilation rate in the room.
Sodium bisulfite	No skin irritation  No eye irritation
Sulfuric acid	International Agency for Research on Cancer (IARC) has determined that occupational exposure to strong inorganic mists or vapours containing sulfuric acid is carcinogenic to humans. Acute overexposure to extremely high airborne concentrations of respiratory irritants has been associated with development of an asthma-like reactive airways syndrome (RADS) in susceptible individuals. The following exposure effects are based on pH of the solution, concentration of the acid, and a review of the literature.

**Subchronic toxicity** No information available

**Chronic toxicity** Repeated inhalation of vapors may cause irritation of respiratory tract or bronchitis.

**Carcinogenicity** Exposure to strong inorganic mists containing sulfuric acid may cause cancer by inhalation. This product is not sprayed and will not generate a mist therefore the cancer hazard by inhalation is not relevant for this product.

Chemical Name	ACGIH	IARC	NTP	OSHA
Sulfuric acid	A2	1	Known	X

**Sensitization** May cause sensitization of susceptible persons.

**Target Organ Effects** Eyes, Skin, Respiratory system.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Ecotoxicity effects** The environmental impact of this product has not been fully investigated.

**Component Information**

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Sodium thiosulfate		LC50= 24000 mg/L Gambusia affinis 96 h	

Aluminum sulfate		LC50= 100 mg/L Carassius auratus 96 h LC50= 37 mg/L Gambusia affinis 96 h	EC50 = 136 mg/L 15 min (Daphnia magna)
Acetic acid		LC50= 79 mg/L Pimephales promelas 96 h LC50= 75 mg/L Lepomis macrochirus 96 h	EC50 = 47 mg/L 24 h (Daphnia magna) EC50 = 65 mg/L 48 h (Daphnia magna)
Sodium bisulfite		LC50= 240 mg/L Gambusia affinis 96 h	EC50 = 119 mg/L 48 h (Daphnia magna)
Sulfuric acid		LC50> 500 mg/L Brachydanio rerio 96 h	EC50 = 29 mg/L 24 h (Daphnia magna)

**Persistence and degradability** Expected to be readily biodegradable

**Bioaccumulation:** - No information available

**Mobility** - No information available

Chemical Name	log Pow
Acetic acid	-0.31

### 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Methods** Dispose of in accordance with local regulations.

**Contaminated packaging** Dispose of in accordance with local regulations.

### 14. TRANSPORT INFORMATION

The information given below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions. Please consult the product packaging for further details.

**DOT** Not regulated

**TDG** Not regulated

**ICAO/IATA** Not regulated

**IMDG/IMO** Not regulated

For transportation information, go to: <http://ship.carestreamhealth.com>.

### 15. REGULATORY INFORMATION

#### International Inventories

<b>TSCA</b>	Complies
<b>DSL/NDSL</b>	Complies
<b>EINECS/ELINCS</b>	Complies
<b>ENCS</b>	Complies
<b>IECSC</b>	Complies
<b>KECL</b>	Complies
<b>PICCS</b>	Complies

**AICS** Complies  
**NZIoC** Complies

**Legend**

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**U.S. Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

**Acute Health Hazard** No  
**Chronic Health Hazard** No  
**Fire Hazard** No  
**Sudden Release of Pressure Hazard** No  
**Reactive Hazard** No

**Clean Water Act**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)**

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

Chemical Name	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Acetic acid - 64-19-7		Group II		

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**TSCA**

This product does not contain any chemicals regulated under TSCA Section 4, Section 5(a), Section 8(a) or Section 8(d).

Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(a) - Chemical-Specific Reporting and Recordkeeping
Sodium bisulfite	PAIR: 01/26/1994
Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(d) - 716.120(a) - Health and Safety Reporting - List of Substances
Sodium bisulfite	01/26/1994

**U.S. State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical Name	California Prop. 65
Sulfuric acid	Carcinogen

**U.S. State Right-to-Know Regulations**

This product does not contain any substances regulated by state right-to-know regulations

**International Regulations**

**Mexico - Grade** No information available

16. OTHER INFORMATION

**Disclaimer for Label**

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.

**Warning!**

- Contains:

Hazardous Components

Chemical Name	CAS-No	Weight %
Ammonium thiosulfate	7783-18-8	5-10
Aluminum sulfate	10043-01-3	0.1-1
Ammonium sulfite	10196-04-0	0.1-1
Acetic acid	64-19-7	0.1-1
Sodium bisulfite	7631-90-5	0.1-1
Sulfuric acid	7664-93-9	0.1-1

May be harmful if swallowed. Mist or aerosol may be irritating to eyes, nose, throat, and lungs.

Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Ensure adequate ventilation. Wash thoroughly after handling.

Additional information is given in the Material Safety Data Sheet.

**Disclaimer**

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text