

MATERIAL SAFETY DATA SHEET.

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Version 2

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

Product name: KODAK INDUSTREX LO Fixer and Replenisher.

Product code: 1634559

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

Contains a known or suspected reproductive toxin

Physical state liquid.

Odor Ammonia.

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

Contains a known or suspected reproductive toxin.

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 %
Sodium bisulfite	7631-90-5	1-5
Ammonium bisulfite	10192-30-0	1-5
Sodium borate	1330-43-4	1-2
Aluminum sulfate	10043-01-3	1-5
Acetic acid	64-19-7	0.1-1.0

Non-Hazardous

Chemical Name	CAS-No	Weight %
Water	7732-18-5	40-50
Potassium acetate	127-08-2	1-5
Ammonium acetate	631-61-8	1-5

4. FIRST AID MEASURES

General advice	IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.
Eye contact	Rinse immediately with plenty of water and seek medical advice.
Skin contact	Rinse immediately with plenty of water and seek medical advice.
Inhalation	Move to fresh air.
Ingestion	Do not induce vomiting. If conscious, give 2 glasses of water. Get immediate medical attention.
Notes to physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash point:	Does not flash.
Suitable Extinguishing Media	Use CO ₂ , dry chemical, or foam.
Unsuitable Extinguishing Media	Do not use a solid water stream as it may scatter and spread fire.
Hazardous Combustion Products	Carbon oxides, Nitrogen oxides (NO _x), 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

Personal precautions	For personal protection see section 8. Ensure adequate ventilation.
Methods for Containment	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
Sodium bisulfite 7631-90-5	TWA: 5 mg/m ³			
Sodium borate 1330-43-4	STEL 6 mg/m ³ TWA: 2 mg/m ³			
Acetic acid 64-19-7	STEL 15 ppm TWA: 10 ppm		TWA: 10 ppm TWA: 25 mg/m ³	

Occupational Exposure Controls

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

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 . 4.9

Odor Ammonia.
Color colorless.

Flash point: Does not flash.
Boiling point/boiling range . >. 100 °C.

Autoignition temperature: No information available.

Vapor Pressure . 24 mbar @ 20 °C.
Vapor density . 0.6
Density No information available.
Volatile organic compounds (VOC) content 40 - 50
Water Solubility . completely soluble.
Melting point/range: No information available.
Specific Gravity . 1.30
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 Do not freeze.

Hazardous Decomposition Products Ammonia. Chloramine. Sulfur oxides.

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 mL/kg (Rat)		
Sodium bisulfite	1420 mg/kg (Rat)		
Potassium acetate	3250 mg/kg (Rat)		
Sodium borate	2403 mg/kg (Rat)	2000 mg/kg (Rabbit)	
Aluminum sulfate	> 5000 mg/kg (Rat)		
Acetic acid	3310 mg/kg (Rat)	1060 mg/kg (Rabbit)	11.4 mg/L (Rat) 4 h

Chemical Name	Other applicable information
Ammonium thiosulfate	No skin irritation No eye irritation
Sodium bisulfite	No skin irritation No eye irritation
Sodium borate	Based on repeated-dose ingestion studies in animals, may cause adverse reproductive and developmental effects. However, the doses administered were many times those to which humans would normally be exposed.
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

Subchronic toxicity No information available.

Chronic toxicity Contains a known or suspected reproductive toxin.

Carcinogenicity Contains no ingredient listed as a carcinogen.

Reproductive toxicity Contains a known or suspected reproductive toxin.

Target Organ Effects Eyes, Skin, Respiratory system, Reproductive 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 bisulfite		LC50= 240 mg/L <i>Gambusia affinis</i> 96 h	EC50 = 119 mg/L 48 h (<i>Daphnia magna</i>)
Potassium acetate		LC50= 6800 mg/L <i>Oncorhynchus mykiss</i> 96 h	EC50 = 7170 mg/L 24 h (<i>Daphnia magna</i>)
Sodium borate	158 mg/L EC50 96 h (<i>Desmodesmus subspicatus</i>) 2.6 - 21.8 mg/L EC50 96 h (<i>Pseudokirchneriella subcapitata</i>)	LC50= 340 mg/L <i>Limanda limanda</i> 96 h	LC50 1085 - 1402 mg/L 48 h (<i>Daphnia magna</i>)
Aluminum sulfate		LC50= 100 mg/L <i>Carassius auratus</i> 96 h LC50= 37 mg/L <i>Gambusia affinis</i> 96 h	EC50 = 136 mg/L 15 min (<i>Daphnia magna</i>)
Acetic acid		LC50= 79 mg/L <i>Pimephales promelas</i> 96 h LC50= 75 mg/L <i>Lepomis macrochirus</i> 96 h	EC50 = 47 mg/L 24 h (<i>Daphnia magna</i>) EC50 = 65 mg/L 48 h (<i>Daphnia magna</i>)

Persistence and degradability No information available.

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

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	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 contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Name	SARA 313 - Threshold Values %
Ammonium thiosulfate - 7783-18-8	1.0
Ammonium bisulfite - 10192-30-0	1.0
Ammonium acetate - 631-61-8	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes.
Chronic Health Hazard	Yes.
Fire Hazard	No.
Sudden Release of Pressure Hazard	No.
Reactive Hazard	No.

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium bisulfite	5000 lb			X
Ammonium bisulfite	5000 lb			X
Ammonium acetate	5000 lb			X
Aluminum sulfate	5000 lb			X
Acetic acid	5000 lb			X

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

This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act.

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, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	SARA Product RQ
Sodium bisulfite	5000 lb		
Ammonium bisulfite	5000 lb		
Ammonium acetate	5000 lb		
Aluminum sulfate	5000 lb		
Acetic acid	5000 lb		

TSCA

Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(a) - Chemical-Specific Reporting and Recordkeeping
Water	Partially exempt chemical substance termed Petroleum Process Stream
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 does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Ammonium thiosulfate	X		X		
Sodium bisulfite	X	X	X		X
Ammonium bisulfite	X	X	X		
Ammonium acetate	X	X	X		
Sodium borate	X		X		
Aluminum sulfate	X	X	X		
Acetic acid	X	X	X		X

International Regulations

Mexico - Grade

Slight risk, Grade 1.

Chemical Name	Carcinogen Status	Exposure Limits
Sodium borate		Mexico: TWA 1 mg/m ³
Aluminum sulfate		Mexico: TWA 2 mg/m ³
Acetic acid		Mexico: TWA 10 ppm Mexico: TWA 25 mg/m ³ Mexico: STEL 15 ppm Mexico: STEL 37 mg/m ³

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 %
Sodium bisulfite	7631-90-5	1-5
Ammonium bisulfite	10192-30-0	1-5
Sodium borate	1330-43-4	1-2
Aluminum sulfate	10043-01-3	1-5
Acetic acid	64-19-7	0.1-1.0

May be harmful if swallowed. Contains a known or suspected reproductive toxin.

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.