Carestream

MATERIAL SAFETY DATA SHEET

Issuing date 2011-12-07 **Revision Date** 2011-12-07 **Version** 1

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

Product name: KODAK GBX Fixer and Replenisher

Product code: 1725662

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

Physical state liquid **Odor** Ammonia **Color** colorless

HMIS **Health Hazard** - 1* **Flammability** - 1 **Physical Hazard** - 0

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	Prolonged exposure may cause chronic effects.
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 In case of contact, immediately flush eyes with plenty of water. Get medical attention immediately if symptoms occur.

Skin contact Wash off immediately with soap and plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Get medical attention immediately if symptoms occur. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Inhalation Move to fresh air. Get medical attention immediately if symptoms occur.

Ingestion Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash point: Does not flash

Suitable Extinguishing Media Water spray. Alcohol-resistant foam. Dry chemical. Carbon dioxide (CO_2).

Unsuitable Extinguishing Media Do not use a solid water stream as it may scatter and spread fire.

Hazardous Combustion Products 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

Personal precautions For personal protection see section 8.

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/m³			
Sodium borate 1330-43-4	STEL 6 mg/m³ TWA: 2 mg/m³			
Acetic acid 64-19-7	STEL 15 ppm TWA: 10 ppm		TWA: 10 ppm TWA: 25 mg/m³	

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 Chemical resistant gloves.

In case of full contact:			
Glove material	Glove thickness	Break through time	Remarks
Nitrile rubber	>=0.38 mm	>480 min	
Neoprene	>=0.65	>240 min	

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

Odor Ammonia
Color colorless
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 occured, and the ventilation rate in the room.

Subchronic toxicity No information available

Chronic toxicity Prolonged exposure may cause chronic effects.

Carcinogenicity Contains no ingredient listed as a carcinogen.

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 bisulfite		LC50= 240 mg/L Gambusia affinis 96 h	EC50 = 119 mg/L 48 h (Daphnia magna)
Potassium acetate		LC50= 6800 mg/L Oncorhynchus mykiss 96 h	EC50 = 7170 mg/L 24 h (Daphnia magna)
Sodium borate	158 mg/L EC50 96 h (Desmodesmus subspicatus) 2.6 - 21.8 mg/L EC50 96 h (Pseudokirchneriella subcapitata)	LC50= 340 mg/L Limanda limanda 96 h	LC50 1085 - 1402 mg/L 48 h (Daphnia magna)
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)

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

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

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.

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.