

MATERIAL SAFETY DATA SHEET

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Version 4

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

Product name: READYMATIC Fixer and Replenisher
KODAK READYMATIC DENTAL Fixer and Replenisher

Product code: 1028869FIX

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

Emergency telephone number
CHEMTREC: +1-703-527-3887 (INTERNATIONAL)
1-800-424-9300 (NORTH AMERICA)

For other information contact: 800-328-2910

Product Use: Restricted to professional users. Photographic chemical.

2. HAZARDS IDENTIFICATION

Warning!

Emergency Overview

May be harmful if swallowed
May cause skin and eye irritation

Physical state liquid **Odor** Ammonia **Color** light yellow

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

Potential Health Effects

Eyes	May cause irritation.
Skin	May cause irritation. 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. May be harmful if inhaled.
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	Preexisting eye disorders. Skin disorders. Respiratory disorders.
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	10-15
Acetic acid	64-19-7	1-5
Ammonium sulfite	10196-04-0	0.1-1
Sodium sulfite	7757-83-7	0.1-1
Sodium borate	1330-43-4	0.1-1

Non-Hazardous

Chemical Name	CAS-No	Weight %
Water	7732-18-5	80-90

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, also under the eyelids, for at least 15 minutes. Get medical attention immediately if symptoms occur.
Skin contact	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.
Inhalation	Move to fresh air. Get medical attention immediately if symptoms occur.
Ingestion	Do NOT induce vomiting. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person. Consult a physician if necessary.
Notes to physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash point:	> 93.600 °C
Suitable Extinguishing Media	Carbon dioxide (CO ₂). Dry chemical. 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
Acetic acid 64-19-7	STEL 15 ppm TWA: 10 ppm		TWA: 10 ppm TWA: 25 mg/m ³	
Sodium borate 1330-43-4	STEL 6 mg/m ³ TWA: 2 mg/m ³			
Sodium hydroxide 1310-73-2	Ceiling: 2 mg/m ³		TWA: 2 mg/m ³	

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	None required under normal conditions. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.
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. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
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 4.4
Flash point: > 93.600 °C
Boiling point/boiling range > 100 °C

Odor Ammonia
Color light yellow
Autoignition temperature: No information available

Vapor Pressure 24 mbar @ 20 °C
Vapor density 0.6
Density No information available
Water Solubility completely soluble
Melting point/range: No information available
Specific Gravity 1.09
Bulk Density: No information available

10. STABILITY AND REACTIVITY

Stability Stable under normal conditions.

Incompatible products Acids. Strong bases. Oxidizing agents. Halogenated compounds. Sodium hypochlorite.

Conditions to Avoid Do not freeze. Extreme pH's.

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

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing. Contact with strong acids liberates sulfur dioxide. Contact with sodium hypochlorite (bleach) may form chloramine (toxic gas). Contact with strong bases liberates ammonia.

11. TOXICOLOGICAL INFORMATION

Acute toxicity - Product Information

Skin May cause irritation. 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. May be harmful if inhaled.

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)		
Acetic acid	3310 mg/kg (Rat)	1060 mg/kg (Rabbit)	11.4 mg/L (Rat) 4 h

Ammonium sulfite	2500 mg/kg (Rat)		
Sodium sulfite	820 mg/kg (Rat)		22 mg/L (Rat) 1 h 5.5 mg/L (Rat) 4 h
Sodium borate	2403 mg/kg (Rat)	2000 mg/kg (Rabbit)	
Chemical Name	Other applicable information		
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 sulfite	No skin irritation Mild 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.		

Subchronic toxicity No information available

Chronic toxicity Prolonged exposure may cause chronic effects.

Carcinogenicity Contains no ingredient listed as a carcinogen.

Reproductive toxicity Contains a known or suspected reproductive toxin. However, based on available data the product should not be classified for reproductive effects.

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

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
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 sulfite		LC50 220 - 460 mg/L Leuciscus idus 96 h	LC50 = 330 mg/L 24 h (Psammecinus miliaris)
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)

Persistence and degradability Expected to be readily biodegradable

Bioaccumulation: - No information available

Mobility - No information available

Chemical Name	log Pow
Acetic acid	-0.31
Sodium sulfite	-4

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Dispose of in accordance with local regulations.

Contaminated packaging Do not re-use empty containers. 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 sulfite - 10196-04-0	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
Acetic acid	5000 lb			X
Ammonium sulfite	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
Acetic acid	5000 lb		
Ammonium sulfite	5000 lb		

TSCA

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

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		
Acetic acid	X	X	X		X
Ammonium sulfite	X	X	X		
Sodium borate	X		X		

International Regulations

Mexico - Grade

Moderate risk, Grade 2

Chemical Name	Carcinogen Status	Exposure Limits
Acetic acid		Mexico: TWA 10 ppm Mexico: TWA 25 mg/m ³ Mexico: STEL 15 ppm Mexico: STEL 37 mg/m ³
Sodium borate		Mexico: TWA 1 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 %
Ammonium thiosulfate	7783-18-8	10-15
Acetic acid	64-19-7	1-5
Ammonium sulfite	10196-04-0	0.1-1
Sodium sulfite	7757-83-7	0.1-1
Sodium borate	1330-43-4	0.1-1

May be harmful if swallowed. May cause skin and eye irritation.

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

If swallowed, call a poison control center or doctor immediately. Drink 1 or 2 glasses of water. 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