SAFETY DATA SHEET

Issuing Date 08/30/2017 **Revision Date** 08/30/2017 **Revision Number** 1

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

Product name: READYMATIC Fixer and Replenisher

Product Code(s) 5285937

Supplier Carestream Health, Inc., 150 Verona Street, Rochester, NY, USA 14608

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

For other information contact: 800-328-2910

Recommended Use Restricted to professional users, Photographic chemical.

2. HAZARDS IDENTIFICATION

Classification

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Label elements

Emergency Overview

Signal word **No signal word required**

Hazard statements
None

Appearance aqueous solution **Physical state** liquid **Odor** Ammonia

Hazards not otherwise classified (HNOC)
• Not applicable

Other hazards which do not result in classification
Repeated contact may cause allergic reactions in very susceptible persons.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Weight-%	Trade Secret
Water	7732-18-5	80-90	*

7732-18-5			
Ammonium thiosulfate 7783-18-8	7783-18-8	10-15	*
Ammonium acetate 631-61-8	631-61-8	1-3	*
Sodium bisulfite 7631-90-5	7631-90-5	1-3	*
Sodium borate 1330-43-4	1330-43-4	<1	*
Acetic acid 64-19-7	64-19-7	<1	*

*The exact percentages (concentrations) have been withheld as trade secrets.

4. FIRST AID MEASURES

First Aid Measures

General advice Show this material safety data sheet to the doctor in attendance.

Eye contact Rinse thoroughly with plenty of water, also under the eyelids. Get medical attention immediately if irritation persists.

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 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately if symptoms occur.

Ingestion Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.

Most important symptoms and effects, both acute and delayed

Main Symptoms None known.

Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically. May cause sensitization of susceptible persons.

5. FIRE-FIGHTING MEASURES

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.

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).

Hazardous combustion products
Carbon oxides, Nitrogen oxides (NOx), Sulfur oxides.

Explosion data
Sensitivity to Mechanical Impact None.
Sensitivity to Static Discharge None.

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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions For personal protection see section 8. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Other information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Dike to collect large liquid spills.

Methods for cleaning up Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Ensure adequate ventilation. Wash thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice. In case of insufficient ventilation, wear suitable respiratory equipment. Wear personal protective equipment.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

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	

Appropriate engineering controls

Engineering Measures Ensure adequate ventilation. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Ensure that eyewash stations and safety showers are close to the workstation location.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	Safety glasses with top and side-shields. If splashes are likely to occur, wear:. Goggles.
Skin and body protection	Long sleeved clothing. Protective gloves. Skin contact should be prevented through use of suitable protective clothing, gloves, and footwear, selected with regard of use conditions and exposure potential.
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. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Hygiene measures	Remove and wash contaminated clothing before re-use. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Provide regular cleaning of equipment, work area and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid		
Appearance	aqueous solution	**Odor**	Ammonia
Color	light yellow	**Odor threshold**	No information available

Property	**Values**	**Remarks • Method**
pH	4.4	
Melting point / freezing point		No information available
Boiling point / boiling range	> 100 °C	No information available
Flash point	> 93.600 °C	No information available.
Evaporation rate		No information available
Flammability (solid, gas)	no data available	
Upper flammability limit:	Unknown	
Lower flammability limit:	Not flammable	
Vapor pressure	24 mbar @ 20 °C	No information available
Vapor density	0.6	No information available
Specific Gravity	1.09	No information available
Hyphen	completely soluble	No information available
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Kinematic viscosity		No information available
Dynamic viscosity		No information available
Oxidizing Properties	No information available	
Explosive properties	No information available	
Other information		No information available
Softening point		
Molecular weight	No information available	No information available
Liquid Density		No information available
Bulk density		No information available

10. STABILITY AND REACTIVITY

Reactivity
No dangerous reaction known under conditions of normal use.

Chemical stability
Stable under recommended storage conditions.

Possibility of 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.

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

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

Hazardous decomposition products
Ammonia. Chloramine. Sulfur oxides. Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	May cause sensitization of susceptible persons.
Eye contact	May cause slight irritation.
Skin contact	Substance may cause slight skin irritation.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Toxicology data for the components

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	90,000 mg/kg (Rat)	-	-
Ammonium thiosulfate 7783-18-8	> 2000 mg/kg (Rat)	-	-
Sodium bisulfite 7631-90-5	1420 mg/kg (Rat)	-	-
Sodium borate 1330-43-4	2660 mg/kg (Rat) Oral LD50 Rat 2660 mg/kg (Source: JAPAN_GHS)	2000 mg/kg (Rabbit) Dermal LD50 Rabbit >2000 mg/kg (Source: IUCLID)	-
Acetic acid 64-19-7	3310 mg/kg (Rat)	1060 mg/kg (Rabbit)	11.4 mg/L (Rat) 4 h Inhalation LC50 Rat 11.4 mg/L 4 h (Source: NLM_CIP)

Information on toxicological effects

Symptoms Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Substance may cause slight skin irritation.
Serious eye damage/eye irritation	May cause slight irritation.
Sensitization	May cause sensitization of susceptible persons.
Mutagenic effects	No information available.
Carcinogenicity	Contains no ingredients above reportable quantities 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.
STOT - single exposure	The substance or mixture is not classified as specific target organ toxicant, single exposure
STOT - repeated exposure	No information available
Target Organ Effects	Eyes, Skin, Respiratory system.
Aspiration Hazard	No information available.

Numerical measures of toxicity - Product Information

Unknown acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	12438 mg/kg
ATEmix (dermal)	63095 mg/kg ppm
ATEmix (inhalation-dust/mist)	678.6 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated

<17% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Ammonium acetate 631-61-8		1.06: 48 h Cyprinus carpio mg/L LC50		
Sodium bisulfite 7631-90-5		240: 96 h Gambusia affinis mg/L LC50 static		119: 48 h Daphnia magna mg/L EC50
Sodium borate 1330-43-4	2.6 - 21.8: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 158: 96 h Desmodesmus subspicatus mg/L EC50	340: 96 h Limanda limanda mg/L LC50		1085 - 1402: 48 h Daphnia magna mg/L LC50
Acetic acid 64-19-7		79: 96 h Pimephales promelas mg/L LC50 static 75: 96 h Lepomis macrochirus mg/L LC50 static		65: 48 h Daphnia magna mg/L EC50 Static 47: 24 h Daphnia magna mg/L EC50

Persistence and degradability

Expected to be readily biodegradable.

Bioaccumulation:

No information available.

Chemical name	log Pow
Acetic acid 64-19-7	-0.31

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

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.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste Status
Acetic acid 64-19-7	Toxic Corrosive Ignitable

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

IATA Not regulated

IMDG Not regulated

For transportation information, go to: http://ship.carestream.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 acetate - 631-61-8	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No

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
Ammonium acetate	5000 lb			X
Sodium bisulfite	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
Ammonium acetate	5000 lb		
Sodium bisulfite	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
Sodium bisulfite	PAIR: 01/26/1994

Component	U.S. - TSCA (Toxic Substances Control Act) - Section 8(d) - 716.120(a) - Health and Safety Reporting - List of Substances
Sodium bisulfite 7631-90-5 (1-3)	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		
Ammonium acetate	X	X	X		
Sodium bisulfite	X	X	X		X
Aluminum sulfate	X	X	X		
Sodium borate	X		X		
Acetic acid	X	X	X		X

International Regulations

Mexico - Grade Moderate risk, Grade 2

Chemical name	Carcinogen Status	Exposure Limits
Sodium borate		Mexico: TWA 1 mg/m^3
Acetic acid		Mexico: TWA 10 ppm Mexico: TWA 25 mg/m^3 Mexico: STEL 15 ppm

		Mexico: STEL 37 mg/m³

16. OTHER INFORMATION

NFPA	**Health Hazard** 1	**Flammability** 1	**Instability** 0
HMIS	**Health Hazard** 1	**Flammability** 1	**Physical Hazard** 0

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Disclaimer

The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

End of Safety Data Sheet