Carestream

**MATERIAL SAFETY DATA SHEET**

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

### Identification of the substance or mixture

**Product name:** GBX Fixer and Replenisher

**Product code:** 4037214

### Use of the Substance/Mixture

**Product Use:** Photographic chemical.

### Company/Undertaking Identification

Carestream Health Korea Ltd
4F Shinyoung B/D 46-10, Jamwon-dong, Seocho-gu, Seoul 137-906, Korea
T: +82-2-3438-7300

**For further information, please contact:**
For environment, health and safety information, email: WW-EHS@carestreamhealth.com

### Emergency telephone

Emergency Transportation/CHEMTREC (24 HOUR) 00-308-13-2549

## 2. HAZARDS IDENTIFICATION

### Classification of the substance or mixture

This material is not classified as hazardous according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

### GHS Label elements, including precautionary statements

This material is not classified as hazardous according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

### Other hazards which do not result in classification

Contact with strong acids liberates sulfur dioxide.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | Weight % |
|---|---|
| Ammonium thiosulfate | 30-40 |
| Sodium bisulfite | 1-5 |
| Ammonium bisulfite | 1-5 |
| Ammonium acetate | 1-5 |
| Sodium borate | 1-2 |
| Aluminum sulfate | 1-5 |

## 4. FIRST AID MEASURES

### Description of necessary 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.

### Most important symptoms/effects, acute and delayed

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

**Eye contact** May cause eye 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.

### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Flash point:** See chapter 9. PHYSICAL AND CHEMICAL PROPERTIES

### Suitable Extinguishing Media

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

**Extinguishing media which shall not be used for safety reasons** None known based on information supplied.

### Specific hazards arising from the chemical

| | |
|---|---|
| **Special Hazard** | 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). |

### Special protective actions for fire-fighters

| | |
|---|---|
| **Special protective equipment for fire-fighters** | Wear self-contained breathing apparatus and protective suit. |

### Other information

| | |
|---|---|
| **Other information** | Cool containers / tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

For personal protection see section 8.

### Environmental precautions

Prevent product from entering drains.

### Methods and materials for containment and cleaning up

Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.
Clean contaminated surface thoroughly.

### Other information

See Section 12 for additional Ecological information.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

| | |
|---|---|
| **Advice on safe handling** | When using, do not eat, drink or smoke. For personal protection see section 8. |
| **Prevention of fire and explosion** | Keep from contact with oxidizing materials, highly oxygenated or halogenated solvents, organic compounds containing reducible functional groups. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Technical measures/Storage conditions** | Keep container tightly closed in a dry and well-ventilated place. |
| **Materials to Avoid** | Acids. Strong bases. Sodium hypochlorite. Halogenated compounds. Contact with strong acids liberates sulfur dioxide. Oxidizing agents. |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

| | |
|---|---|
| **Exposure limits** | Ingredients with workplace control parameters |

| Chemical Name | Korea |
|---|---|
| Sodium bisulfite | TWA 5 mg/m³ |
| Sodium borate | TWA 1 mg/m³ |
| Aluminum sulfate | TWA 2 mg/m³ |

## Appropriate engineering controls

**Engineering Measures** Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

## Individual protection measures, such as personal protective equipment (PPE)

**Personal Protective Equipment**

**General Information** If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied.

**Respiratory protection** 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 Protection** Tightly fitting safety goggles

**Skin and body protection** Wear protective gloves/ 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 | |

**Hygiene measures** Handle in accordance with good industrial hygiene and safety practice.

**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

## 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.

## Conditions to Avoid

Do not freeze.

## Materials to Avoid

Acids. Strong bases. Sodium hypochlorite. Halogenated compounds. Contact with strong acids liberates sulfur dioxide. Oxidizing agents.

## Hazardous Decomposition Products

Ammonia. Chloramine. Sulfur oxides.

# 11. TOXICOLOGICAL INFORMATION

## Acute toxicity Product Information.

| | |
|---|---|
| **Skin contact** | Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. |
| **Eye contact** | May cause eye 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** | 0% of the mixture consists of ingredient(s) of unknown toxicity |
| **Oral** | 4,413.31 mg/kg |
| **Dermal** | 59,282.35 mg/kg |

## Acute toxicity - Component Information

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Ammonium thiosulfate | > 2000 mg/kg ( Rat ) | | |
| Sodium bisulfite | 1420 mg/kg ( Rat ) | | |
| Sodium borate | 2403 mg/kg ( Rat ) | 2000 mg/kg ( Rabbit ) | |
| Aluminum sulfate | > 5000 mg/kg ( Rat ) | | |

| Chemical Name | Other applicable information |
|---|---|
| Ammonium thiosulfate | No skin irritation<br><br>No eye irritation |
| Sodium bisulfite | No skin irritation<br><br>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<br>No skin irritation<br>Cell transformation assay: negative<br><br>Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea |

**Aggravated Medical Conditions** None known.

### Subchronic toxicity

no data available

### Chronic toxicity

**Chronic toxicity** Prolonged exposure may cause chronic effects.
**Sensitization** No information available.
**Neurological effects** No information available.
**Target Organ Effects** Eyes, Skin, Respiratory system.

### CMR Effects

**Carcinogenicity** Contains no ingredient listed as a carcinogen.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

The environmental impact of this product has not been fully investigated

**Acute aquatic toxicity Product Information**
No information available

**Acute aquatic toxicity 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) |
| 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) |

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

**Bioaccumulative potential**
No information available

## 13. DISPOSAL CONSIDERATIONS

**Waste from Residues / Unused Products** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 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.

ADR/RID Not regulated

IMDG/IMO Not regulated

ICAO/IATA Not regulated

ADN Not regulated

DOT Not regulated

TDG Not regulated

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

## 15. REGULATORY INFORMATION

### International Inventories

| | |
|---|---|
| **EINECS/ELINCS** | Complies |
| **TSCA** | Complies |
| **DSL/NDSL** | 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

### National regulatory information

| Chemical Name | Toxic Chemicals Control Law | Toxic Release Inventory Chemicals - Group 1 | Toxic Release Inventory Chemicals - Group 2 |
|---|---|---|---|
| Aluminum sulfate | not applicable | not applicable | >=1.0 % |

## 16. OTHER INFORMATION

Revision Date 2012-03-21
Revision Note

**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**

**End of Material Safety Data Sheet**