

## 5158605\_GB X Fixer and Replenisher (GBX Fixer and Replenisher)

### Carestream Health, Inc.

Part Number: 5158605

Version No: 3.11

Safety data sheet according to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

Chemwatch Hazard Alert Code: 2

Initial Date: 26/03/2022

Revision Date: 05/03/2024

Print Date: 30/12/2025

S.REACH.GB.EN

## SECTION 1 Identification of the substance / mixture and of the company / undertaking

### 1.1. Product Identifier

Product name	5158605_GB X Fixer and Replenisher (GBX Fixer and Replenisher)
Chemical Name	Not Applicable
Synonyms	Not Available
Chemical formula	Not Applicable
Other means of identification	Not Available

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Restricted to professional users. Photographic chemical Use according to manufacturer's directions.
Uses advised against	No specific uses advised against are identified.

### 1.3. Details of the manufacturer or importer of the safety data sheet

Manufacturer/Supplier	Carestream Health, Inc.
Address	150 Verona Street Rochester, NY 14608 United States
Telephone	800-328-2910
Fax	Not Available
Website	www.carestream.com
Email	WW-EHS@carestreamhealth.com

### 1.4. Emergency telephone number


Association / Organisation	CHEMTREC (North America)
Emergency telephone number(s)	+1-800-424-9300
Other emergency telephone number(s)	CHEMTREC (International) +1-703-527-3887

## SECTION 2 Hazards identification

### 2.1. Classification of the substance or mixture

Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 <sup>[1]</sup>	H319 - Serious Eye Damage/Eye Irritation Category 2
Legend:	1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567

### 2.2. Label elements

Hazard pictogram(s)	
Signal word	Warning

### Hazard statement(s)

H319	Causes serious eye irritation.
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### Supplementary statement(s)

Not Applicable

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**Precautionary statement(s) Prevention**

<b>P280</b>	Wear protective gloves, protective clothing, eye protection and face protection.
<b>P264</b>	Wash all exposed external body areas thoroughly after handling.

**Precautionary statement(s) Response**

<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P337+P313</b>	If eye irritation persists: Get medical advice/attention.

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

Material contains Aluminum sulfate, diethylenetriaminepentaacetic acid pentasodium salt.

**2.3. Other hazards**

Cumulative effects may result following exposure\*.

May produce discomfort of the eyes\*.

\*LIMITED EVIDENCE

<b>diethylenetriaminepentaacetic acid pentasodium salt</b>	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
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This substance/mixture does not meet the criteria for classification as Persistent, Bioaccumulative, and Toxic (PBT) in accordance with Annex XIII, Commission Delegated Regulation (EU) 2017/2100, and Commission Regulation (EU) 2018/605.

This substance/mixture does not meet the criteria for classification as very Persistent and very Bioaccumulative (vPvB) in accordance with Annex XIII, Commission Delegated Regulation (EU) 2017/2100, and Commission Regulation (EU) 2018/605.

This substance/mixture does not meet the criteria for classification as Persistent, Mobile and Toxic (PMT) in accordance with Commission Delegated Regulation (EU) 2023/707.

This substance/mixture does not meet the criteria for classification as very Persistent and very Mobile (vPvM) in accordance with Commission Delegated Regulation (EU) 2023/707.

The substance/mixture does not contain components considered to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605, nor is it included in the list established under REACH Article 59(1), at concentrations equal to or greater than 0.1% (w/w).

No further product hazard information.

**SECTION 3 Composition / information on ingredients**

**3.1.Substances**

See 'Composition on ingredients' in Section 3.2

**3.2.Mixtures**

1. CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	SCL / M-Factor	Nanoform Particle Characteristics
1. 7732-18-5 2.231-791-2 3.Not Available 4.Not Available	43-55	<u>Water</u>	Non hazardous <sup>[1]</sup>	SCL: Not Available Acute M factor: Not Applicable Chronic M factor: Not Applicable	Not Available
1. 7783-18-8 2.231-982-0 3.Not Available 4.Not Available	30-40	<u>Ammonium thiosulfate</u>	Non hazardous <sup>[1]</sup>	0 Acute M factor: Not Applicable Chronic M factor: Not Applicable	Not Available
1. 140-01-2 2.205-391-3 3.607-736-00-7 4.Not Available	<1	<u>diethylenetriaminepentaacetic acid pentasodium salt</u>	Acute Toxicity (Inhalation) Category 4, Specific Target Organ Toxicity - Repeated Exposure Category 2; H332, H373 <sup>[2]</sup>	Repr. 1B; H360D: C ≥ 3 %   inhalation: ATE = 1,5 mg/L (dusts or mists) Acute M factor: Not Applicable Chronic M factor: Not Applicable	Not Available
1. 10043-01-3 2.233-135-0 3.Not Available 4.Not Available	1-3	<u>Aluminum sulfate</u>	Corrosive to Metals Category 1, Serious Eye Damage/Eye Irritation Category 1; H290, H318 <sup>[1]</sup>	0 Acute M factor: Not Applicable Chronic M factor: Not Applicable	Not Available

**Legend:** 1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567; 3. Classification drawn from C&L; \* EU IOELVs available; [e] Substance identified as having endocrine disrupting properties

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**SECTION 4 First aid measures**

**4.1. Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"><li>▶ Wash out immediately with fresh running water.</li><li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li><li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li><li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li></ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"><li>▶ Immediately remove all contaminated clothing, including footwear.</li><li>▶ Flush skin and hair with running water (and soap if available).</li><li>▶ Seek medical attention in event of irritation.</li></ul>
<b>Inhalation</b>	<ul style="list-style-type: none"><li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li><li>▶ Other measures are usually unnecessary.</li></ul>
<b>Ingestion</b>	<ul style="list-style-type: none"><li>▶ Immediately give a glass of water.</li><li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li></ul>

**4.2 Most important symptoms and effects, both acute and delayed**

See Section 11

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5 Firefighting measures**

**5.1. Extinguishing media**

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

**5.2. Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	None known.
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**5.3. Advice for firefighters**

<b>Fire Fighting</b>	<ul style="list-style-type: none"><li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li><li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li><li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li><li>▶ Use fire fighting procedures suitable for surrounding area.</li><li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li><li>▶ Cool fire exposed containers with water spray from a protected location.</li><li>▶ If safe to do so, remove containers from path of fire.</li><li>▶ Equipment should be thoroughly decontaminated after use.</li></ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"><li>▶ Non combustible.</li><li>▶ Not considered a significant fire risk, however containers may burn.</li></ul> <p>May emit corrosive fumes.</p>

**SECTION 6 Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

See section 8

**6.2. Environmental precautions**

See section 12

**6.3. Methods and material for containment and cleaning up**

<b>Minor Spills</b>	<ul style="list-style-type: none"><li>▶ Clean up all spills immediately.</li><li>▶ Avoid breathing vapours and contact with skin and eyes.</li><li>▶ Control personal contact with the substance, by using protective equipment.</li><li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li><li>▶ Wipe up.</li><li>▶ Place in a suitable, labelled container for waste disposal.</li></ul>
<b>Major Spills</b>	<p>Moderate hazard.</p> <ul style="list-style-type: none"><li>▶ Clear area of personnel and move upwind.</li><li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li><li>▶ Wear breathing apparatus plus protective gloves.</li><li>▶ Prevent, by any means available, spillage from entering drains or water course.</li><li>▶ Stop leak if safe to do so.</li><li>▶ Contain spill with sand, earth or vermiculite.</li><li>▶ Collect recoverable product into labelled containers for recycling.</li><li>▶ Neutralise/decontaminate residue (see Section 13 for specific agent).</li><li>▶ Collect solid residues and seal in labelled drums for disposal.</li><li>▶ Wash area and prevent runoff into drains.</li><li>▶ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.</li><li>▶ If contamination of drains or waterways occurs, advise emergency services.</li></ul>

**6.4. Reference to other sections**

Personal Protective Equipment advice is contained in Section 8 of the SDS.

**SECTION 7 Handling and storage**

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7.1. Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> <li>▶ Avoid skin contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Avoid contact with moisture.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ <b>When handling, DO NOT eat, drink or smoke.</b></li> <li>▶ Keep containers securely sealed when not in use.</li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately. Launder contaminated clothing before re-use.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> <li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> </ul>
Fire and explosion protection	See section 5
Other information	

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
Storage incompatibility	None known
Hazard categories in accordance with Regulation (EC) No 2012/18/EU (Seveso III)	Not Available
Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of	Not Available

7.3. Specific end use(s)

See section 1.2

SECTION 8 Exposure controls / personal protection

8.1. Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
diethylenetriaminepentaacetic acid pentasodium salt	Dermal 11718 mg/kg bw/day (Systemic, Chronic) Inhalation 3 mg/m <sup>3</sup> (Local, Chronic) Inhalation 3 mg/m <sup>3</sup> (Local, Acute) Dermal 5859 mg/kg bw/day (Systemic, Chronic) * Oral 1.2 mg/kg bw/day (Systemic, Chronic) * Inhalation 0.6 mg/m <sup>3</sup> (Local, Chronic) * Inhalation 1.2 mg/m <sup>3</sup> (Local, Acute) *	6.4 mg/L (Water (Fresh)) 3.1 mg/L (Water - Intermittent release) 0.64 mg/L (Water (Marine)) 23 mg/kg sediment dw (Sediment (Fresh Water)) 2.3 mg/kg sediment dw (Sediment (Marine)) 0.853 mg/kg soil dw (Soil) 51 mg/L (STP)
Aluminum sulfate	Dermal 1.71 mg/kg bw/day (Systemic, Chronic) Inhalation 3 mg/m <sup>3</sup> (Systemic, Chronic) Dermal 0.882 mg/cm <sup>2</sup> (Local, Chronic) Inhalation 3 mg/m <sup>3</sup> (Local, Chronic) Dermal 46.7 mg/kg bw/day (Systemic, Acute) Inhalation 2 mg/m <sup>3</sup> (Systemic, Acute) Dermal 0.882 mg/cm <sup>2</sup> (Local, Acute) Inhalation 2 mg/m <sup>3</sup> (Local, Acute) Dermal 0.855 mg/kg bw/day (Systemic, Chronic) * Inhalation 1.5 mg/m <sup>3</sup> (Systemic, Chronic) * Oral 1.9 mg/kg bw/day (Systemic, Chronic) * Dermal 0.441 mg/cm <sup>2</sup> (Local, Chronic) * Inhalation 1.5 mg/m <sup>3</sup> (Local, Chronic) * Dermal 23.35 mg/kg bw/day (Systemic, Acute) * Inhalation 1 mg/m <sup>3</sup> (Systemic, Acute) * Oral 92.4 mg/kg bw/day (Systemic, Acute) * Dermal 0.133 mg/cm <sup>2</sup> (Local, Acute) * Inhalation 1 mg/m <sup>3</sup> (Local, Acute) *	4.5 mg/L (Water (Fresh)) 30.11 mg/L (Water - Intermittent release) 64 mg/L (Water (Marine)) 10 mg/kg sediment dw (Sediment (Fresh Water)) 31.4 mg/kg sediment dw (Sediment (Marine)) 58 mg/kg soil dw (Soil) 60.2 mg/L (STP) 150 mg/kg food (Oral)

\* Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs).	Aluminum sulfate	Aluminium salts, soluble	2 mg/m <sup>3</sup>	Not Available	Not Available	Not Available

8.2. Exposure controls

8.2.1. Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The
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design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

8.2.2. Individual protection measures, such as personal protective equipment



Eye and face protection

- ▶ Safety glasses with side shields.
- ▶ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]
- ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

Skin protection

See Hand protection below

Hands/feet protection

- ▶ Wear chemical protective gloves, e.g. PVC.
  - ▶ Wear safety footwear or safety gumboots, e.g. Rubber
- The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.
- Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
- Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:
- frequency and duration of contact,
  - chemical resistance of glove material,
  - glove thickness and
  - dexterity
- Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).
- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
  - When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
  - Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.
  - Contaminated gloves should be replaced.
- As defined in ASTM F-739-96 in any application, gloves are rated as:
- Excellent when breakthrough time > 480 min
  - Good when breakthrough time > 20 min
  - Fair when breakthrough time < 20 min
  - Poor when glove material degrades
- For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.
- It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.
- Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.
- Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:
- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
  - Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential
- Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Body protection

See Other protection below

**Other protection**

- ▶ Overalls.
- ▶ P.V.C apron.
- ▶ Barrier cream.
- ▶ Skin cleansing cream.
- ▶ Eye wash unit.

**8.2.3. Environmental exposure controls**

See section 12

**SECTION 9 Physical and chemical properties****9.1. Information on basic physical and chemical properties**

<b>Appearance</b>	Colourless		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	1.3
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	4.9	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	>100	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Applicable	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	2.4	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Miscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	0.6	<b>VOC g/L</b>	Not Available
<b>Heat of Combustion (kJ/g)</b>	Not Available	<b>Ignition Distance (cm)</b>	Not Available
<b>Flame Height (cm)</b>	Not Available	<b>Flame Duration (s)</b>	Not Available
<b>Enclosed Space Ignition Time Equivalent (s/m3)</b>	Not Available	<b>Enclosed Space Ignition Deflagration Density (g/m3)</b>	Not Available
<b>Nanoform Solubility</b>	Not Available	<b>Nanoform Particle Characteristics</b>	Not Available
<b>Particle Size</b>	Not Available		

**9.2. Other information**

Not Available

**SECTION 10 Stability and reactivity**

<b>10.1.Reactivity</b>	See section 7.2
<b>10.2. Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
<b>10.3. Possibility of hazardous reactions</b>	See section 7.2
<b>10.4. Conditions to avoid</b>	See section 7.2
<b>10.5. Incompatible materials</b>	See section 7.2
<b>10.6. Hazardous decomposition products</b>	See section 5.3

**SECTION 11 Toxicological information****11.1. Information on toxicological effects**

<b>a) Acute Toxicity</b>	Based on available data, the classification criteria are not met.
<b>b) Skin Irritation/Corrosion</b>	Based on available data, the classification criteria are not met.
<b>c) Serious Eye Damage/Irritation</b>	There is sufficient evidence to classify this material as eye damaging or irritating
<b>d) Respiratory or Skin sensitisation</b>	Based on available data, the classification criteria are not met.
<b>e) Mutagenicity</b>	Based on available data, the classification criteria are not met.
<b>f) Carcinogenicity</b>	Based on available data, the classification criteria are not met.
<b>g) Reproductivity</b>	Based on available data, the classification criteria are not met.
<b>h) STOT - Single Exposure</b>	Based on available data, the classification criteria are not met.

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<b>i) STOT - Repeated Exposure</b>	Based on available data, the classification criteria are not met.
<b>j) Aspiration Hazard</b>	Based on available data, the classification criteria are not met.
<b>Inhaled</b>	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
<b>Ingestion</b>	The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
<b>Skin Contact</b>	Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.
<b>Eye</b>	This material causes serious eye irritation.
<b>Chronic</b>	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

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	Water	Not Available
Ammonium thiosulfate	TOXICITY	IRRITATION
	Oral (Rat) LD50: >90000 mg/kg <sup>[2]</sup>	Not Available
	Dermal (rabbit) LD50: >2000 mg/kg <sup>[1]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
diethylenetriaminepentaacetic acid pentasodium salt	TOXICITY	IRRITATION
	Inhalation (Rat) LC50: >2.6 mg/l4h <sup>[1]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (Guinea) LD50; 1098 mg/kg <sup>[2]</sup>	
Aluminum sulfate	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (Rat) LD50: 2500 mg/kg <sup>[1]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
Aluminum sulfate	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >1167.5 mg/kg <sup>[1]</sup>	Eye (Rodent - rabbit): 10mg/24H - Severe
	Inhalation (Rat) LC50: >5 mg/l4h <sup>[1]</sup>	Eye: adverse effect observed (irreversible damage) <sup>[1]</sup>
	Oral (Rat) LD50: >2000 mg/kg <sup>[1]</sup>	Eye: adverse effect observed (irritating) <sup>[1]</sup>
		Skin: adverse effect observed (irritating) <sup>[1]</sup>
	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>	

**Legend:** 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

<b>DIETHYLENETRIAMINEPENTAACETIC ACID PENTASODIUM SALT</b>	No significant acute toxicological data identified in literature search.		
<b>Acute Toxicity</b>	✘	<b>Carcinogenicity</b>	✘
<b>Skin Irritation/Corrosion</b>	✘	<b>Reproductivity</b>	✘
<b>Serious Eye Damage/Irritation</b>	✔	<b>STOT - Single Exposure</b>	✘
<b>Respiratory or Skin sensitisation</b>	✘	<b>STOT - Repeated Exposure</b>	✘
<b>Mutagenicity</b>	✘	<b>Aspiration Hazard</b>	✘

**Legend:** ✘ – Data either not available or does not fill the criteria for classification  
✔ – Data available to make classification

## 11.2 Information on other hazards

### 11.2.1. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

### 11.2.2. Other information

See Section 11.1

## SECTION 12 Ecological information

### 12.1. Toxicity

5158605_GB X Fixer and Replenisher (GB X Fixer and Replenisher)	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available

Continued...

Water	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available

Ammonium thiosulfate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	43.8mg/l	2
	EC50	48h	Crustacea	89mg/l	2
	EC50	96h	Algae or other aquatic plants	48mg/l	2
	NOEC(ECx)	672h	Fish	0.17mg/l	2
	LC50	96h	Fish	1.04mg/l	2

diethylenetriaminepentaacetic acid pentasodium salt	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	2.6mg/l	1
	EC50	48h	Crustacea	>500mg/l	1
	NOEC(ECx)	Not Available	Crustacea	1mg/l	2
	LC50	96h	Fish	1005-1250mg/L	4

Aluminum sulfate	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	0.017mg/L	2
	EC50	48h	Crustacea	0.33mg/l	2
	EC50(ECx)	120h	Fish	<0.001mg/L	5
	EC50	96h	Algae or other aquatic plants	0.005mg/L	2
	LC50	96h	Fish	>0.42mg/l	2

**Legend:** Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. US EPA, Ecotox database - Aquatic Toxicity Data 4. ECETOC Aquatic Hazard Assessment Data 5. NITE (Japan) - Bioconcentration Data 6. METI (Japan) - Bioconcentration Data 7. Vendor Data

## 12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Water	LOW	LOW
Aluminum sulfate	HIGH	HIGH

## 12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
Water	LOW (LogKOW = -1.38)
Ammonium thiosulfate	LOW (LogKOW = 0.93)
diethylenetriaminepentaacetic acid pentasodium salt	LOW (LogKOW = -16.25)
Aluminum sulfate	LOW (LogKOW = -2.2002)

## 12.4. Mobility in soil

Ingredient	Mobility
Aluminum sulfate	LOW (Log KOC = 6.124)

## 12.5. Results of PBT and vPvB assessment

	P	B	T	PBT criteria fulfilled?	vP	vB	vPvB criteria fulfilled?
5158605_GB X Fixer and Replenisher (GBX Fixer and Replenisher)	✗	✗	✗	No	✗	✗	No
Water	✗	✗	✗	No	✗	✗	No
Ammonium thiosulfate	✗	✗	✗	No	✗	✗	No
diethylenetriaminepentaacetic acid pentasodium salt	✓	✗	✓	No	✗	✗	No
Aluminum sulfate	✗	✗	✗	No	✗	✗	No

## 12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

## 12.7. Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

## SECTION 13 Disposal considerations

### 13.1. Waste treatment methods

Product / Packaging disposal	▶ <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.
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Continued...

**5158605\_GBX Fixer and Replenisher (GBX Fixer and Replenisher)**

- ▶ It may be necessary to collect all wash water for treatment before disposal.
- ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- ▶ Where in doubt contact the responsible authority.

Recover silver before disposal. European Waste Catalogue EWC: 09 01 99 Wastes not otherwise specified.

Dispose of in accordance with local regulations

- ▶ Containers may still present a chemical hazard/ danger when empty.
- ▶ Return to supplier for reuse/ recycling if possible.

Otherwise:

- ▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- ▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- ▶ Reduction
- ▶ Reuse
- ▶ Recycling
- ▶ Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- ▶ Recycle wherever possible.
- ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- ▶ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or incineration in a licensed apparatus (after admixture with suitable combustible material).
- ▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

<b>Waste treatment options</b>	Not Available
<b>Sewage disposal options</b>	Not Available

**SECTION 14 Transport information**

The dangerous goods information given below is based solely on the product formulation, and does not consider the product packaging configuration.

Depending on inner packaging quantities and packaging instructions, this product may meet specific regulatory exemptions or exclusions for the various modes of transport.

Please consult the product packaging for further details or go to the "Dangerous Goods Worksheets for Chemical Products" folder, located at: [ship.carestream.com](http://ship.carestream.com).

**Labels Required**

<b>Marine Pollutant</b>	NO
<b>HAZCHEM</b>	Not Applicable

**Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

<b>14.1. UN number or ID number</b>	Not Applicable	
<b>14.2. UN proper shipping name</b>	Not Applicable	
<b>14.3. Transport hazard class(es)</b>	Class	Not Applicable
	Subsidiary Hazard	Not Applicable
<b>14.4. Packing group</b>	Not Applicable	
<b>14.5. Environmental hazard</b>	Not Applicable	
<b>14.6. Special precautions for user</b>	Hazard identification (Kemler)	Not Applicable
	Classification code	Not Applicable
	Hazard Label	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Transport Category	Not Applicable
	Tunnel Restriction Code	Not Applicable

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

<b>14.1. UN number</b>	Not Applicable	
<b>14.2. UN proper shipping name</b>	Not Applicable	
<b>14.3. Transport hazard class(es)</b>	ICAO/IATA Class	Not Applicable
	ICAO / IATA Subsidiary Hazard	Not Applicable
	ERG Code	Not Applicable
<b>14.4. Packing group</b>	Not Applicable	
<b>14.5. Environmental hazard</b>	Not Applicable	
<b>14.6. Special precautions for user</b>	Special provisions	Not Applicable
	Cargo Only Packing Instructions	Not Applicable
	Cargo Only Maximum Qty / Pack	Not Applicable

5158605\_GB X Fixer and Replenisher (GBX Fixer and Replenisher)

Passenger and Cargo Packing Instructions	Not Applicable
Passenger and Cargo Maximum Qty / Pack	Not Applicable
Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable
Passenger and Cargo Limited Maximum Qty / Pack	Not Applicable

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	IMDG Class	Not Applicable
	IMDG Subsidiary Hazard	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	Not Applicable
	Special provisions	Not Applicable
	Limited Quantities	Not Applicable

Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Not Applicable	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Classification code	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Equipment required	Not Applicable
	Fire cones number	Not Applicable

14.7. Maritime transport in bulk according to IMO instruments

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code  
Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
Water	Not Applicable
Ammonium thiosulfate	Not Applicable
diethylenetriaminepentaacetic acid pentasodium salt	Not Applicable
Aluminum sulfate	Not Applicable

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
Water	Not Applicable
Ammonium thiosulfate	Not Applicable
diethylenetriaminepentaacetic acid pentasodium salt	Not Applicable
Aluminum sulfate	Not Applicable

SECTION 15 Regulatory information

15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture

Water is found on the following regulatory lists  
Not Applicable

Ammonium thiosulfate is found on the following regulatory lists  
Not Applicable

diethylenetriaminepentaacetic acid pentasodium salt is found on the following regulatory lists  
Great Britain GB mandatory classification and labelling list (GB MCL List)

Aluminum sulfate is found on the following regulatory lists

UK Workplace Exposure Limits (WELs):

**Additional Regulatory Information**

Not Applicable

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

**Information according to 2012/18/EU (Seveso III):**

<b>Seveso Category</b>	Not Available
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**15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

**National Inventory Status**

National Inventory	Status
Australia - AIIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (Water; Ammonium thiosulfate; diethylenetriaminepentaacetic acid pentasodium salt; Aluminum sulfate)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	All chemical substances in this product have been designated as TSCA Inventory 'Active'
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
UAE - Control List (Banned/Restricted Substances)	No (Water; Ammonium thiosulfate; diethylenetriaminepentaacetic acid pentasodium salt; Aluminum sulfate)
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

**SECTION 16 Other information**

<b>Revision Date</b>	05/03/2024
<b>Initial Date</b>	26/03/2022

**Full text Risk and Hazard codes**

<b>H290</b>	May be corrosive to metals.
<b>H318</b>	Causes serious eye damage.
<b>H332</b>	Harmful if inhaled.
<b>H373</b>	May cause damage to organs through prolonged or repeated exposure.

**Other information**

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

**Definitions and abbreviations**

- ▶ PC - TWA: Permissible Concentration-Time Weighted Average
- ▶ PC - STEL: Permissible Concentration-Short Term Exposure Limit
- ▶ IARC: International Agency for Research on Cancer
- ▶ ACGIH: American Conference of Governmental Industrial Hygienists
- ▶ STEL: Short Term Exposure Limit
- ▶ TEEL: Temporary Emergency Exposure Limit,
- ▶ IDLH: Immediately Dangerous to Life or Health Concentrations
- ▶ ES: Exposure Standard
- ▶ OSF: Odour Safety Factor
- ▶ NOAEL: No Observed Adverse Effect Level
- ▶ LOAEL: Lowest Observed Adverse Effect Level
- ▶ TLV: Threshold Limit Value
- ▶ LOD: Limit Of Detection
- ▶ OTV: Odour Threshold Value
- ▶ BCF: BioConcentration Factors

Continued...

- ▶ BEI: Biological Exposure Index
- ▶ DNEL: Derived No-Effect Level
- ▶ PNEC: Predicted no-effect concentration
- ▶ MARPOL: International Convention for the Prevention of Pollution from Ships
- ▶ IMSBC: International Maritime Solid Bulk Cargoes Code
- ▶ IGC: International Gas Carrier Code
- ▶ IBC: International Bulk Chemical Code
  
- ▶ AIC: Australian Inventory of Industrial Chemicals
- ▶ DSL: Domestic Substances List
- ▶ NDSL: Non-Domestic Substances List
- ▶ IECSC: Inventory of Existing Chemical Substance in China
- ▶ EINECS: European INventory of Existing Commercial chemical Substances
- ▶ ELINCS: European List of Notified Chemical Substances
- ▶ NLP: No-Longer Polymers
- ▶ ENCS: Existing and New Chemical Substances Inventory
- ▶ KECI: Korea Existing Chemicals Inventory
- ▶ NZIoC: New Zealand Inventory of Chemicals
- ▶ PICCS: Philippine Inventory of Chemicals and Chemical Substances
- ▶ TSCA: Toxic Substances Control Act
- ▶ TCSI: Taiwan Chemical Substance Inventory
- ▶ INSQ: Inventario Nacional de Sustancias Químicas
- ▶ NCI: National Chemical Inventory
- ▶ FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

#### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Classification Procedure
Serious Eye Damage/Eye Irritation Category 2, H319	Calculation method

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