

## Material Safety Data Sheet

Issuing Date 2014-02-05

Revision date 2014-06-16

Version 1

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

#### 1.1 Product identifier

**Product Code:** 5016308  
**Product Name:** CARESTREAM DENTAL X-Ray Fixer

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

**Identified uses:** Restricted to professional users. Photographic chemical.  
**Uses advised against** No information available

#### 1.3 Details of the supplier of the safety data sheet

**Supplier** Carestream Health UK Ltd., 1 Park Lane, Hemel Hempstead, Hertfordshire, HP2 4YG

#### For further information, please contact:

**Product Information** +44 (0)870 6000245  
**E-mail address** For environment, health and safety information, email: EMEAHS@carestream.com

#### 1.4 Emergency telephone number

**Emergency telephone** CHEMTREC International 1-703-527-3887  
CHEMTREC UK +(44)-870-8200418

## 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

**Regulation (EC) No 1272/2008**

Not classified as dangerous according to Regulation 1272/2008

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**  
*For the full text of the R-phrases mentioned in this Section, see Section 16*

**Symbol(s)**  
Not dangerous

#### 2.2 Label elements

Not Applicable

### 2.3 OTHER INFORMATION

#### Unknown acute toxicity Properties Affecting Health

0% of the mixture consists of ingredient(s) of unknown toxicity  
May cause skin and eye irritation.

#### Environmental properties

None known.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Not applicable

### 3.2. mixtures

#### Hazardous components

Chemical Name	EC-No	CAS-No	Weight percent	Classification (67/548)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Ammonium thiosulfate	Present	7783-18-8	40-45	-	no data available	no data available
Acetic acid	Present	64-19-7	5-10	R10 C; R35	Skin Corr. 1A (H314) Flam. Liq. 3 (H226)	no data available
Sodium sulfite	Present	7757-83-7	5-10	-	no data available	no data available
Sodium borate	Present	1330-43-4	<2	Repr.Cat.2; R60-61	Repr. 1B (H360FD)	no data available
Ethylenediamine tetraacetic acid	Present	60-00-4	<0.01	Xi; R36  T; R25 Xi; R38	Eye Irrit. 2 (H319)	no data available

#### Non-hazardous ingredients

Chemical Name	EC-No	CAS-No	Weight percent	Classification (67/548)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Water	Present	7732-18-5	40-45	-	no data available	no data available

**For the full text of the R-phrases mentioned in this Section, see Section 16**

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### 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.

#### Ingestion

Do NOT induce vomiting. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

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

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

**Main symptoms** None known.

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

**Notes to Physician** Treat symptomatically.

### **5. FIRE-FIGHTING MEASURES**

#### **5.1 Extinguishing media**

**Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Extinguishing media which shall not be used for safety reasons**

No information available

#### **5.2 Special hazards arising from the substance or mixture**

**Special Hazard**

Thermal decomposition can lead to release of irritating and toxic gases and vapours.

#### **5.3 Advice for fire-fighters**

**Special protective equipment for fire-fighters**

As in any fire, wear self-contained breathing apparatus and full protective gear.

### **6. ACCIDENTAL RELEASE MEASURES**

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

For personal protection see section 8.

See Section 12 for additional information.

#### **6.2 Environmental precautions**

Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained. Try to prevent the material from entering drains or water courses.

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

Keep in suitable, closed containers for disposal. 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).

### **7. HANDLING AND STORAGE**

### 7.1 Precautions for safe handling

- Advice on safe handling** Ensure adequate ventilation. Wash thoroughly after handling. For personal protection see section 8.
- Prevention of fire and explosion** Keep from contact with oxidizing materials.

### 7.2 Conditions for safe storage, including any incompatibilities

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

**Materials to avoid** Strong oxidising agents. Strong acids. Strong bases. Contact with strong acids liberates sulphur dioxide. Contact with sodium hypochlorite (bleach) may form chloramine (toxic gas). Contact with strong bases liberates ammonia.

### 7.3 Specific end uses

**Exposure scenario** No information available

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Exposure Limits

Chemical Name	European Union	The United Kingdom	France	Spain	Germany
Acetic acid 64-19-7	TWA 10 ppm TWA 25 mg/m <sup>3</sup>		STEL 10 ppm STEL 25 mg/m <sup>3</sup>	TWA 10 ppm TWA 25 mg/m <sup>3</sup> STEL 15 ppm STEL 37 mg/m <sup>3</sup>	AGW 10 ppm AGW 25 mg/m <sup>3</sup>
Sodium borate 1330-43-4		STEL 3 mg/m <sup>3</sup> TWA 1 mg/m <sup>3</sup>	TWA 1 mg/m <sup>3</sup> R2	TWA 2 mg/m <sup>3</sup> STEL 6 mg/m <sup>3</sup> R(TR1) R(TR2)	
Chemical Name	Italy	Portugal	The Netherlands	Finland	Denmark
Acetic acid 64-19-7		TWA 10 ppm TWA 25 mg/m <sup>3</sup> STEL 15 ppm		TWA 5 ppm TWA 13 mg/m <sup>3</sup> STEL 10 ppm STEL 25 mg/m <sup>3</sup>	TWA 10 ppm TWA 25 mg/m <sup>3</sup>
Sodium borate 1330-43-4		TWA 2 mg/m <sup>3</sup> STEL 6 mg/m <sup>3</sup> C(A4)			TWA 1 mg/m <sup>3</sup>
Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
Acetic acid 64-19-7	STEL 20 ppm STEL 50 mg/m <sup>3</sup> TWA 10 ppm TWA 25 mg/m <sup>3</sup>	SS-C** TWA 10 ppm TWA 25 mg/m <sup>3</sup> STEL 20 ppm STEL 50 mg/m <sup>3</sup>	TWA 15 mg/m <sup>3</sup> STEL 30 mg/m <sup>3</sup>	TWA 10 ppm TWA 25 mg/m <sup>3</sup> STEL 20 ppm STEL 37.5 mg/m <sup>3</sup>	TWA 10 ppm TWA 25 mg/m <sup>3</sup> STEL 15 ppm STEL 37 mg/m <sup>3</sup>
Sodium borate 1330-43-4		TWA 1 mg/m <sup>3</sup>		TWA 1 mg/m <sup>3</sup> STEL 3 mg/m <sup>3</sup>	TWA 1 mg/m <sup>3</sup>
Chemical Name	Sweden	Greece	Belgium	Hungary	Czech Republic
Acetic acid 64-19-7	LLV 5 ppm LLV 13 mg/m <sup>3</sup> STV 10 ppm STV 25 mg/m <sup>3</sup>	TWA 10 ppm TWA 25 mg/m <sup>3</sup> STEL 15 ppm STEL 37 mg/m <sup>3</sup>	TWA 10 ppm TWA 25 mg/m <sup>3</sup> STEL 15 ppm STEL 38 mg/m <sup>3</sup>	STEL 25mg/m <sup>3</sup> TWA 25mg/m <sup>3</sup>	TWA 25 mg/m <sup>3</sup> Ceiling 35 mg/m <sup>3</sup>

Sodium borate 1330-43-4		TWA 10 mg/m <sup>3</sup>	TWA 2 mg/m <sup>3</sup> STEL 6 mg/m <sup>3</sup>		
<b>Chemical Name</b>	<b>Luxembourg</b>	<b>Russia</b>	<b>Estonia</b>	<b>Latvia</b>	<b>Slovenia</b>
Ammonium thiosulfate 7783-18-8		MAC 10 mg/m <sup>3</sup>		TWA 10 mg/m <sup>3</sup>	
Acetic acid 64-19-7	TWA 10 ppm TWA 25 mg/m <sup>3</sup>	S* MAC 5 mg/m <sup>3</sup>	STEL 10 ppm STEL 25 mg/m <sup>3</sup> TWA 10 ppm TWA 25 mg/m <sup>3</sup>	TWA 10 ppm TWA 25 mg/m <sup>3</sup>	TWA 10 ppm TWA 25 mg/m <sup>3</sup>
Sodium borate 1330-43-4		MAC 2 mg/m <sup>3</sup>			
Ethylenediamine tetraacetic acid 60-00-4		MAC 2 mg/m <sup>3</sup>			
<b>Chemical Name</b>	<b>Slovakia</b>	<b>Croatia</b>	<b>Turkey</b>	<b>Romania</b>	<b>Bulgaria</b>
Ammonium thiosulfate 7783-18-8					TWA 10.0 mg/m <sup>3</sup>
Acetic acid 64-19-7	TWA 10 ppm TWA 25 mg/m <sup>3</sup>	TWA 10 ppm TWA 25 mg/m <sup>3</sup>	TWA 10 ppm TWA 25 mg/m <sup>3</sup>	TWA 10 ppm TWA 25 mg/m <sup>3</sup>	STEL 37.0 mg/m <sup>3</sup> TWA 25.0 mg/m <sup>3</sup>
Sodium borate 1330-43-4		TWA 1 mg/m <sup>3</sup>			TWA 5.0 mg/m <sup>3</sup>
<b>Chemical Name</b>	<b>Lithuania</b>	<b>European Union</b>	<b>The United Kingdom</b>	<b>France</b>	<b>Spain</b>
Ammonium thiosulfate 7783-18-8	TWA 10 mg/m <sup>3</sup>				
Acetic acid 64-19-7	TWA 10 ppm TWA 25 mg/m <sup>3</sup>				

#### Biological occupational exposure limits

No information available

**Derived No Effect Level** No information available

**Predicted No Effect Concentration (PNEC)** No information available

#### 8.2 Exposure controls

**Engineering measures** Ensure adequate ventilation, especially in confined areas.

#### Personal protective equipment

**General information** These recommendations apply to the product as supplied.

**Respiratory protection** None under normal use conditions. In case of insufficient ventilation wear suitable respiratory equipment.

**Eye protection** If splashes are likely to occur, wear: Safety glasses with side-shields.

**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	
butyl-rubber	>=0.36	>480 min	

**Hygiene measures** Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use.

**Environmental exposure controls** No information available.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

<b>Physical State</b>	Liquid	<b>Odour</b>	odourless
<b>Colour</b>	colourless	<b>Odour Threshold</b>	No information available

<u>Property</u>	<u>Values</u>	<u>Note - Method</u>
<b>pH</b>	4.9	No information available
<b>Melting point/range:</b>		No information available
<b>Freezing point:</b>		No information available
<b>Boiling point/boiling range</b>	> 100 °C	No information available
<b>Flash point:</b>	Does not flash	No information available
<b>evaporation rate</b>		No information available
<b>Flammability (solid, gas)</b>		No information available
<b>Flammability Limits in Air</b>		No information available
<b>Upper flammability limit</b>	No information available	
<b>Lower flammability limit</b>	No information available	
<b>Vapour Pressure</b>	18 mbar @ 20 °C	No information available
<b>vapour density</b>	0.6	No information available
<b>specific gravity</b>	1.32	No information available
<b>Relative density</b>		No information available
<b>Water solubility</b>	completely soluble	No information available
<b>Solubility in other solvents</b>		No information available
<b>Partition coefficient: n-octanol/water</b>		No information available
<b>Autoignition Temperature</b>		No information available
<b>Decomposition temperature</b>		No information available
<b>Viscosity:</b>		No information available
<b>Explosive properties</b>	No information available	
<b>Oxidising properties</b>	No information available	

### 9.2 OTHER INFORMATION

**Bulk density:** No information available

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No dangerous reaction known under conditions of normal use.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of hazardous reactions

Hazardous polymerisation does not occur.

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

**10.4 Conditions to avoid**

Heat, flames and sparks.

**10.5 incompatible materials**

Strong oxidising agents. Strong acids. Strong bases. Contact with strong acids liberates sulphur dioxide. Contact with sodium hypochlorite (bleach) may form chloramine (toxic gas). Contact with strong bases liberates ammonia.

**10.6 Hazardous decomposition products**

Nitrogen oxides (NOx). Sulphur oxides.

**11. TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects**

**Acute toxicity**

<b>Inhalation</b>	No hazard from product as supplied.
<b>Eye contact</b>	May cause eye irritation.
<b>Skin contact</b>	Does not pose a potential of skin irritation and sensitization.
<b>Ingestion</b>	No hazard from product as supplied. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
<b>Unknown acute toxicity</b>	0% of the mixture consists of ingredient(s) of unknown toxicity

**Acute toxicity - Component Information**

Chemical Name	Oral LD50	dermal LD50	Inhalation LC50
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 Inhalation LC50 Rat 11.4 mg/L 4 h (Source: NLM_CIP)
Sodium sulfite	820 mg/kg ( Rat ) Oral LD50 Rat 820 mg/kg (Source: IUCLID)		22 mg/L ( Rat ) 1 h Inhalation LC50 Rat >22 mg/L 1 h (Source: IUCLID)
Sodium borate	2660 mg/kg ( Rat ) Oral LD50 Rat 2660 mg/kg (Source: IUCLID)	2000 mg/kg ( Rabbit ) Dermal LD50 Rabbit >2000 mg/kg (Source: IUCLID)	
Ethylenediamine tetraacetic acid	1700 mg/kg ( Rat ) Oral LD50 Rat 1700 mg/kg (Source: IUCLID)		

Chemical Name	Other applicable information
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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.

**Chronic toxicity**

**Carcinogenicity** Contains no ingredients above reportable quantities listed as a carcinogen.

**Sensitisation** No information available.

**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** No information available.

## 12. ECOLOGICAL INFORMATION

**12.1 Toxicity**

**Ecotoxicity effects** Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

**Product Information**  
No information available.

**Component Information**

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Acetic acid		75: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 79: 96 h <i>Pimephales promelas</i> mg/L LC50 static	65: 48 h <i>Daphnia magna</i> mg/L EC50 Static
Sodium borate	2.6 - 21.8: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static 158: 96 h <i>Desmodesmus subspicatus</i> mg/L EC50	340: 96 h <i>Limanda limanda</i> mg/L LC50	1085 - 1402: 48 h <i>Daphnia magna</i> mg/L LC50
Ethylenediamine tetraacetic acid	1.01: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50	34 - 62: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 44.2 - 76.5: 96 h <i>Pimephales promelas</i> mg/L LC50 static	113: 48 h <i>Daphnia magna</i> mg/L EC50 Static

**Chronic aquatic toxicity**



**Product Information**  
No information available.

**Component Information**  
No information available.

### 12.2 Persistence and degradability

Expected to be readily biodegradable.

### 12.3 Bioaccumulative potential

**Bioaccumulative potential** No information available.

**Partition coefficient: n-octanol/water** No information available

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

### 12.4 Mobility in soil

No information available.

### 12.5 Results of PBT and vPvB assessment

No information available.

### 12.6 Other adverse effects

No information available

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

This information is provided to assist users in the correct disposal of working solutions prepared and used to Carestream Health specifications.

**Working Solution**

Waste material is currently classified as hazardous under Council Directive 91/689/EEC. The European Waste Catalogue Code is 09 01 04 Fixer solutions. Dispose according to the local regulations or guidelines that apply to the category of waste. Ensure the use of properly authorised waste management companies.

**Waste from residues / unused products**

Dispose of in accordance with local regulations.

<b>Empty containers</b>	If thoroughly cleaned, preferably by rinsing at least three times with small quantities of water, waste product packaging may be consigned for recovery or disposal as non hazardous waste. Whenever possible, minimize waste by using the rinsing water to make up the working solution. The European Waste Catalogue Code is 15 01 02 plastic packaging.
<b>Contaminated packaging</b>	Waste product packaging contaminated by residues of hazardous contents should be consigned for disposal as hazardous waste. In this case, the European Waste Catalogue Code is 15 01 10 packaging containing residues of or contaminated by dangerous substances.

## 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 have 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.

<b>IMDG/IMO</b>	Not regulated
14.1. UN/ID no	Not regulated
14.2. Proper shipping name	Not regulated
14.3. Hazard Class	Not regulated
14.4. Packing group	Not regulated
14.5. Marine pollutant	None
14.6. Special Provisions	None

<b>ADR/RID</b>	Not regulated
14.1. UN/ID no	Not regulated
14.2. Proper shipping name	Not regulated
14.3. Hazard Class	Not regulated
14.4. Packing group	Not regulated
14.5. Classification code	None
14.6. Special Provisions	None

<b>ICAO/IATA</b>	Not regulated
14.1. UN/ID no	Not regulated
14.2. Proper shipping name	Not regulated
14.3. Hazard Class	Not regulated
14.4. Packing group	Not regulated
14.5. ERG Code	None
14.6. Special Provisions	None

For transportation information, go to: <http://ship.carestream.com>

## 15. REGULATORY INFORMATION

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

#### International Inventories

EINECS/ELINCS	Complies
TSCA	Complies

DSL/NDSL Complies  
ENCS Complies  
IECSC Complies  
KECL Complies  
PICCS Complies  
AICS Complies

**Legend**

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory  
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances  
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List  
PICCS - Philippines Inventory of Chemicals and Chemical Substances  
ENCS - Japan Existing and New Chemical Substances  
IECSC - China Inventory of Existing Chemical Substances  
AICS - Australian Inventory of Chemical Substances  
KECL - Korean Existing and Evaluated Chemical Substances

**15.2 Chemical Safety Assessment**

No information available

**16. Other information**

**Full text of R-phrases referred to under sections 2 and 3**

R10 - Flammable  
R35 - Causes severe burns  
R60 - May impair fertility  
R61 - May cause harm to the unborn child  
R36 - Irritating to eyes

**Full text of H-Statements referred to under sections 2 and 3**

H360FD - May damage fertility. May damage the unborn child  
H314 - Causes severe skin burns and eye damage  
H226 - Flammable liquid and vapour  
H319 - Causes serious eye irritation

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**Disclaimer**

The information provided on this SDS 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.