

SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of: Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision Date 15 March 2019

Version 1.04

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product code: 5060686

Product name: CARESTREAM DENTAL X-ray Developer

Pure substance/mixture Mixture

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

Identified uses: Photographic chemical. Restricted to professional users.

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

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

1.4. Emergency telephone number

Emergency Telephone CHEMTREC International 1-703-527-3887

CHEMTREC UK +(44)-870-8200418

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Skin Corrosion/Irritation	Category 1 - (H314)
Skin Sensitisation	Category 1 - (H317)
Germ cell mutagenicity	Category 2 - (H341)
Carcinogenicity	Category 2 - (H351)
Acute aquatic toxicity	Category 1 - (H400)

2.2. Label elements



Signal word
Danger

Contains Hydroquinone

Hazard Statements

H314 - Causes severe skin burns and eye damage

H317 - May cause an allergic skin reaction

H341 - Suspected of causing genetic defects

H351 - Suspected of causing cancer

H400 - Very toxic to aquatic life

Precautionary Statements - EU (§28, 1272/2008)

P201 - Obtain special instructions before use

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor/physician

P302 + P352 - IF ON SKIN: Wash with plenty of water and soap

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

2.3. Other hazards

None.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

No information available

3.2 Mixtures

Chemical Name	EC-No	CAS-No	Weight percent	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Registration Number	SVHC candidates
Water	Present	7732-18-5	70-80	No hazards have been classified	no data available	
Potassium sulfite	Present	10117-38-1	10-15	no data available	01-2119537319-34	
Hydroquinone	Present	123-31-9	3-5	Acute Tox. 4 (H302) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Muta. 2 (H341) Carc. 2 (H351) Aquatic Acute 1 (H400)	01-2119524016-51	
Sodium borate	Present	1330-43-4	1-2.5	Repr. 1B (H360FD)	no data available	Reason for inclusion Toxic for reproduction, Article 57c (215-540-4)

Full text of H- and EUH-phrases: see section 16

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated

	clothes and shoes. Get immediate medical advice/attention. May cause an allergic skin reaction.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.
Inhalation	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Wear personal protective clothing (see section 8).

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

Symptoms	Burning sensation. Itching. Rashes. Hives.
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4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors	Product is a corrosive material. Use of gastric lavage or emesis is contra-indicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitisation in susceptible persons. Treat symptomatically.
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Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. The product is not flammable.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours. Product is or contains a sensitiser. May cause sensitisation by skin contact.
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5.3. Advice for firefighters

Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Other Information	Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Dyke 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.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse. Remove contaminated clothing and shoes.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Materials to Avoid Contact with strong acids liberates sulphur dioxide.

7.3. Specific end use(s)

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

Chemical Name	European Union	The United Kingdom	France	Spain	Germany
Hydroquinone 123-31-9	-	STEL 1.5 mg/m ³ TWA 0.5 mg/m ³	TWA 2 mg/m ³ C2 M2	TWA 2 mg/m ³ S+	-
Sodium borate 1330-43-4	-	STEL 3 mg/m ³ TWA 1 mg/m ³	TWA 1 mg/m ³ R1	TWA 2 mg/m ³ STEL 6 mg/m ³	-
Chemical Name	Italy	Portugal	The Netherlands	Finland	Denmark

Hydroquinone 123-31-9	-	TWA 2 mg/m ³ S+ C(A3)	-	TWA 0.5 mg/m ³ STEL 2 mg/m ³	Ceiling 2 mg/m ³
Sodium borate 1330-43-4	-	TWA 2 mg/m ³ STEL 6 mg/m ³ C(A4)	-	-	TWA 1 mg/m ³
Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
Hydroquinone 123-31-9	Sensitizer STEL 4 mg/m ³ TWA 2 mg/m ³ B	S+ H* TWA 2 mg/m ³ C2 STEL 2 mg/m ³ M2	TWA 1 mg/m ³ STEL 2 mg/m ³	TWA 0.5 mg/m ³ K** A+ STEL 1.5 mg/m ³	TWA 0.5 mg/m ³ STEL 1.5 mg/m ³ Sensitizer
Sodium borate 1330-43-4	-	STEL 0.8 mg/m ³	-	TWA 1 mg/m ³ STEL 2 mg/m ³	TWA 1 mg/m ³ STEL 3 mg/m ³ Repr1B

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering controls	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. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Ensure that eyewash stations and safety showers are close to the workstation location.
Personal protective equipment	These recommendations apply to the product as supplied
Eye/face protection	Face protection shield.
Hand protection	Wear suitable gloves. Impervious gloves.
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.
Environmental exposure controls	Do not allow material to contaminate ground water system.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1

Physical state	Liquid
Appearance	No information available
Colour	colourless
Odour	Odourless.
Odour Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks/ • Method</u>
pH	10.6	

Melting point/range:	no data available	no data available
Boiling point/boiling range	> 100 °C	
Flash Point	no data available	No information available
Evaporation rate	no data available	No information available
Flammability (solid, gas)	no data available	No information available
Flammability Limits in Air		No information available
Upper flammability limit	no data available	
Lower flammability limit	no data available	
Vapour pressure	24 mbar @ 20 °C	
Vapour density	0.6	
Specific Gravity	1.24	
Water Solubility	completely soluble	
Solubility in other solvents	no data available	No information available
Partition coefficient: n-octanol/water	no data available	No information available
Autoignition temperature	no data available	No information available
Decomposition temperature	no data available	No information available
Viscosity, kinematic	no data available	
Viscosity, dynamic	no data available	
Explosive properties	no data available	
Oxidizing properties	no data available	

9.2

Softening point	no data available
Molecular Weight	no data available
Density	no data available

Section 10: STABILITY AND REACTIVITY**10.1. Reactivity**

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact None

Sensitivity to Static Discharge None

10.3. Possibility of hazardous reactions

None under normal processing

Hazardous polymerisation does not occur

10.4. Conditions to avoid

Exposure to air or moisture over prolonged periods.

10.5

Contact with strong acids liberates sulphur dioxide.

10.6

Sulphur oxides Carbon oxides

Section 11: TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects**

Information on likely routes of exposure**Product Information**

Inhalation	May cause irritation of respiratory tract. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.
Eye contact	Causes serious eye damage. May cause burns.
Skin contact	Causes severe burns. May cause allergic skin reaction. May cause sensitisation by skin contact.
Ingestion	Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea. May cause lung damage if swallowed. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking.

Information on toxicological effects

Symptoms	Redness. Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives.
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Numerical measures of toxicity**Acute toxicity**

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

ATEmix (oral)	5,010.00 mg/kg
ATEmix (dermal)	12,626.00 mg/kg
ATEmix (inhalation-dust/mist)	0.08 mg/l

Toxicity					
Form of exposure	Method	Species	Values	Duration	Remarks
Oral		Rat	>2000		

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water	90,000 mg/kg (Rat)		
Potassium sulfite	>3200 mg/kg (rat)		
Hydroquinone	375 mg/kg (Rat) Oral LD50 Rat 375 mg/kg (Source: ECHA)	> 4800 mg/kg (Rat)	
Sodium borate	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)	2 mg/m ³ (Rat) 4 h Inhalation LC50 Rat >2 mg/m ³ 4 h (Source: HSDB)

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

Skin corrosion/irritation	No information available.
Serious eye damage/eye irritation	No information available.
Respiratory or skin sensitisation	May cause sensitisation by skin contact.
Germ cell mutagenicity	Classification based on data available for ingredients. Contains a known or suspected mutagen.
Carcinogenicity	Classification based on data available for ingredients.

Chemical Name	European Union
Hydroquinone	Carc. 2

Reproductive toxicity Based on available data, the classification criteria are not met.

STOT - single exposure Based on available data, the classification criteria are not met.

STOT - repeated exposure Based on available data, the classification criteria are not met.

Aspiration hazard Based on available data, the classification criteria are not met.

Section 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Ecotoxicity Very toxic to aquatic life.

Unknown aquatic toxicity 0% 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
Potassium sulfite	-	220 - 460: 96 h Leuciscus idus mg/L LC50 static		-
Hydroquinone	0.335: 72 h Pseudokirchneriella subcapitata mg/L EC50 13.5: 120 h Desmodesmus subspicatus mg/L EC50	0.044: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.044: 96 h Pimephales promelas mg/L LC50 flow-through 0.1 - 0.18: 96 h Pimephales promelas mg/L LC50 static 0.17: 96 h Brachydanio rerio mg/L LC50		0.29: 48 h Daphnia magna mg/L EC50
Sodium borate	158: 96 h Desmodesmus subspicatus mg/L EC50 2.6 - 21.8: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	340: 96 h Limanda limanda mg/L LC50		1085 - 1402: 48 h Daphnia magna mg/L LC50

12.2 Persistence and degradability

Readily biodegradable.

12.3 Bioaccumulative potential

Bioaccumulation: .

Bioconcentration factor (BCF)

Chemical Name	log Pow
Hydroquinone	0.5

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.

Section 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 01 Water based developer and activator. 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	Should not be released into the environment. Dispose of as hazardous waste in compliance with local and national regulations.
Empty containers	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.
Contaminated packaging	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.
Other information	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

Section 14: TRANSPORT INFORMATION

This product meets the requirements of the limited quantity exemption. The shipping case will be marked as a limited quantity. It does not require other labeling or placarding except if transported by aircraft.

IMDG/IMO

14.1. UN/ID no	UN3082
14.2. Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S
14.3. Hazard class	9
14.4. Packing Group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (Hydroquinone), 9, III, Limited Quantity
14.5. Marine pollutant	Hydroquinone
Environmental hazard	Yes
14.6. Special Provisions	274, 335, 969
EmS	F-A, S-F
Note:	To be able to exploit a "marine pollutant exception" (IMDG 2.10.2.7), product case labels must be modified to add the required GHS statements in the languages of the countries of export and import and LQ mark must be covered.

ADR/RID

14.1. UN/ID no	UN3082
14.2. Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S

14.3. Hazard class	9
ADR/RID-Labels	9
14.4. Packing Group	III
Description	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S (Hydroquinone), 9, III, Limited Quantity
14.5. Environmental hazard	Yes
14.6. Special Provisions	274, 335, 601, 375
Classification Code	M6
Tunnel restriction code	(E)
ICAO/IATA	
14.1. UN/ID no	UN3082
14.2. Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s
14.3. Hazard class	9
14.4. Packing Group	III
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s (Hydroquinone), 9, III, Limited Quantity
14.5. Environmental hazard	Yes
14.6. Special Provisions	A97, A158
ERG Code	9L

To be able to exploit an "environmentally hazardous exception" (IATA Special Provision A197), product case labels must be modified to add the required GHS statements in the languages of the countries of export and import and LQ mark must be covered

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

Section 15: REGULATORY INFORMATION

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

COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV)
This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

International Inventories

AICS	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
NZIoC	Complies
PICCS	Complies
TSCA	Complies

Legend:

AICS - Australian Inventory of Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

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
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

15.2 Chemical Safety Assessment

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

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3

H302 - Harmful if swallowed
H318 - Causes serious eye damage
H317 - May cause an allergic skin reaction
H341 - Suspected of causing genetic defects
H351 - Suspected of causing cancer
H400 - Very toxic to aquatic life
H360FD - May damage fertility. May damage the unborn child

SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA:	Time weighted average	STEL:	Short term exposure limit
Ceiling:	Maximum limit value:	*	Skin designation

Revision Date 15 March 2019

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