

SAFETY DATA SHEET

Issuing Date no data available

Revision Date 22 September 2017

Version 2.02

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

1.1. Product identifier

Product code: 5158621
Product name: GBX Developer and Replenisher

Pure substance/mixture Mixture

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

Serious eye damage/eye irritation	Category 1
Skin sensitisation	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 2
Acute aquatic toxicity	Category 1

2.2. Label elements



Danger

Contains Hydroquinone

Hazard Statements

H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
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
P260 - Do not breathe dust/fume/gas/mist/vapours/spray
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 soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention

2.3. Other hazards

Physical-Chemical Properties

Contact with strong acids liberates sulphur dioxide.

Properties Affecting Health

May cause adverse kidney effects. May cause adverse liver effects. Repeated or prolonged exposure may cause central nervous system damage.

Environmental properties

Should not be released into the environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC-No	CAS-No	Weight percent	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH Registration Number
Diethylene glycol	Present	111-46-6	5-<10	Acute Tox. 4 (H302), STOT(RE)2 (H373)	01-2119457857-21
Hydroquinone	Present	123-31-9	5-8	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
Potassium carbonate	Present	584-08-7	1-<3	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT Single Exp. 3 (H335)	01-2119532646-36
Sodium borate	Present	1330-43-4	0.1-<1	Repr. 1B (H360FD)	no data available

4. FIRST AID MEASURES

4.1. Description of first aid measures

General advice

Call 911 or emergency medical service. Remove and isolate contaminated clothing and shoes.

Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately if symptoms occur.
Skin contact	Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. Get medical attention immediately if symptoms occur.
Ingestion	If swallowed, call a poison control centre or doctor immediately. Do not induce vomiting without medical advice. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person.
Inhalation	Move victim to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.
Protection of first-aiders	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

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

Main symptoms	May cause an allergic skin reaction. Irritation. Rashes. Coughing and/ or wheezing. Central nervous system depression.
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4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Dry chemical, CO₂, water spray or regular foam. Water spray, fog or regular foam.

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 toxic and corrosive gases/vapours.

5.3. Advice for firefighters

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

Ensure adequate ventilation. Avoid contact with the skin and the eyes. For personal protection see section 8.

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas. Prevent further leakage or spillage if safe to do so. Local authorities should be advised if significant spillages cannot be contained.

See Section 12 for additional information.

6.3. Methods and material for containment and cleaning up

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

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes and clothing. Avoid breathing vapours or mists. Ensure adequate ventilation. Wash thoroughly after handling.

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 container tightly closed in a dry and well-ventilated place. Incompatible with oxidising agents.

Materials to Avoid Strong oxidising agents. Acids.

7.3. Specific end use(s)

Specific use(s) Photographic chemical.
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
Diethylene glycol 111-46-6		STEL 69 ppm STEL 303 mg/m ³ TWA 23 ppm TWA 101 mg/m ³			AGW 10 ppm AGW 44 mg/m ³
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
Diethylene glycol 111-46-6					TWA 2.5 ppm TWA 11 mg/m ³
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
Diethylene glycol 111-46-6	STEL 40 ppm STEL 176 mg/m ³ TWA 10 ppm TWA 44 mg/m ³	SS-C** TWA 10 ppm TWA 44 mg/m ³ STEL 40 ppm STEL 176 mg/m ³	TWA 10 mg/m ³		TWA 23 ppm TWA 100 mg/m ³ STEL 69 ppm STEL 300 mg/m ³
Hydroquinone 123-31-9	Sensitizer STEL 4 mg/m ³ TWA 2 mg/m ³ B	S+ H* TWA 2 mg/m ³ C3	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

		STEL 2 mg/m ³ M3			
Sodium borate 1330-43-4		TWA 1 mg/m ³		TWA 1 mg/m ³ STEL 3 mg/m ³	TWA 1 mg/m ³ STEL 3 mg/m ³
Chemical Name	Sweden	Greece	Belgium	Hungary	Czech Republic
Diethylene glycol 111-46-6	LLV 10 ppm LLV 45 mg/m ³ STV 20 ppm STV 90 mg/m ³ A*				
Hydroquinone 123-31-9	LLV 0.5 mg/m ³ STV 1.5 mg/m ³ S+	TWA 2 mg/m ³ STEL 4 mg/m ³	TWA 1 mg/m ³		TWA 2 mg/m ³ Ceiling 4 mg/m ³ S* Senzibilizatory
Potassium carbonate 584-08-7					TWA 5 mg/m ³ Ceiling 10 mg/m ³
Sodium borate 1330-43-4		TWA 10 mg/m ³	TWA 2 mg/m ³ STEL 6 mg/m ³		
Chemical Name	Luxembourg	Russia	Estonia	Latvia	Slovenia
Diethylene glycol 111-46-6		MAC 10 mg/m ³	A* STEL 20 ppm STEL 90 mg/m ³ TWA 10 ppm TWA 45 mg/m ³	TWA 10 mg/m ³	STEL 40 ppm STEL 176 mg/m ³ TWA 10 ppm TWA 44 mg/m ³
Hydroquinone 123-31-9		S* MAC 1 mg/m ³	Sensibilisaatorid STEL 1.5 mg/m ³ TWA 0.5 mg/m ³		STEL 2 mg/m ³ TWA 2 mg/m ³ M2 C2
Potassium carbonate 584-08-7		MAC 2 mg/m ³		TWA 2 mg/m ³	
Sodium borate 1330-43-4		MAC 2 mg/m ³			
Chemical Name	Slovakia	Croatia	Turkey	Romania	Bulgaria
Diethylene glycol 111-46-6	Ceiling 90 mg/m ³ TWA 10 ppm TWA 44 mg/m ³	TWA 23 ppm TWA 101 mg/m ³		STEL 184 ppm STEL 800 mg/m ³ TWA 115 ppm TWA 500 mg/m ³	TWA 10 mg/m ³
Hydroquinone 123-31-9	S* TWA 2 mg/m ³	TWA 0.5 mg/m ³		STEL 2 mg/m ³ TWA 1 mg/m ³	TWA 2.0 mg/m ³
Sodium borate 1330-43-4		TWA 1 mg/m ³			
Chemical Name	Lithuania	European Union	The United Kingdom	France	Spain
Diethylene glycol 111-46-6	S* TWA 10 ppm TWA 45 mg/m ³ STEL 20 ppm STEL 90 mg/m ³				
Hydroquinone 123-31-9	Alergenas+ Mutagenas Kancerogenas TWA 0.5 mg/m ³ STEL 1.5 mg/m ³				
Potassium carbonate 584-08-7	TWA 2 mg/m ³				

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	Showers, eyewash stations, and ventilation systems.
Personal protective equipment	
General Information	These recommendations apply to the product as supplied.
Respiratory protection	None under normal use conditions. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.
Eye Protection	Tightly fitting safety goggles.
Skin and body protection	Wear suitable protective clothing.
Hand Protection	Protective gloves. Avoid natural rubber gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Hygiene measures	When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Keep away from food, drink and animal feeding stuffs. Remove and wash contaminated clothing before re-use. Wash hands before breaks and immediately after handling the product.
Environmental Exposure Controls	Do not allow material to contaminate ground water system.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state	liquid	Odour	Odourless
Colour	light yellow	Odour Threshold	No information available
Property	Values	Remarks/ - Method	
pH	10.2	No information available	
Melting point/range:		No information available	
Freezing Point:		No information available	
Boiling point/boiling range	> 100 °C	No information available	
Flash point:	> 94.1 °C > 201.200 °F	No information available	
Evaporation rate		No information available	
Flammability (solid, gas)		No information available	
Flammability Limits in Air		No information available	
Upper flammability limit	No information available		
Lower flammability limit	No information available		
Vapour pressure	24 mbar @ 20 °C	No information available	
Vapour density	0.6	No information available	
Specific Gravity	1.230	No information available	
Relative density		No information available	
Water Solubility	completely soluble	No information available	
Solubility in other solvents		No information available	
Partition coefficient: n-octanol/water		No information available	
Autoignition temperature		No information available	
Decomposition temperature		No information available	
Viscosity:		No information available	
Explosive properties	No information available		
Oxidising Properties	No information available		

9.2. Other information

Bulk density:	No information available
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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

Contact with strong acids liberates sulphur dioxide.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong oxidising agents. Acids.

10.6. Hazardous decomposition products

Carbon oxides, Sulphur oxides.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Product Information

Inhalation	May cause irritation of respiratory tract. Contact with strong acids liberates sulphur dioxide. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea.
Eye contact	Irritating to eyes.
Skin contact	May cause skin irritation and/or dermatitis. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Avoid contact with skin.
Ingestion	Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea. May cause adverse kidney effects. May cause central nervous system effects. Harmful if swallowed.

Oral LD50	Similar formulation: >
2000 mg/kg (rat)	

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Diethylene glycol	12565 mg/kg (Rat)	11890 mg/kg (Rabbit)	
Hydroquinone	375 mg/kg (Rat) Oral LD50 Rat 375 mg/kg (Source: ECHA)	> 4800 mg/kg (Rat)	

Potassium carbonate	> 2000 mg/kg (Rat) Oral LD50 Rat 2000 mg/kg (Source: ECHA)	>2000 mg/kg (Rabbit)	
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)	

Chronic toxicity

Carcinogenicity Contains a known or suspected carcinogen.
 - EU Carc.Cat.3.

Chemical Name	European Union	The United Kingdom
Hydroquinone	Carc. 2	

Sensitisation This mixture contains hydroquinone which is classified as a dermal sensitizer in some jurisdictions. A very similar mixture was negative in dermal sensitization studies with and without prior sensitization to hydroquinone. Based on the results of these studies, this mixture is not expected to present a dermal sensitization hazard to humans. May cause sensitisation by skin contact.

Reproductive toxicity Contains ingredients that are suspected reproductive hazards. However, based on available data the product should not be classified for reproductive effects.

Mutagenic effects No specific testing was done on this product. Mutagenic testing of the hazardous ingredient in this product has resulted in some positive mutagenic results.

Target Organ Effects Central nervous system. Respiratory system. Kidney. Liver. Eyes.

Symptoms Allergic skin reactions including rash, dermatitis, irritation, and itching.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Ecotoxicity effects Very toxic to aquatic organisms.

Unknown aquatic toxicity ~3% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Product Information
 No information available.

Component Information

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Diethylene glycol		75200: 96 h Pimephales promelas mg/L LC50 flow-through	84000: 48 h Daphnia magna mg/L EC50
Hydroquinone	0.335: 72 h Pseudokirchneriella subcapitata mg/L EC50 13.5: 120 h Desmodesmus subspicatus mg/L EC50	0.1 - 0.18: 96 h Pimephales promelas mg/L LC50 static 0.044: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.044: 96 h Pimephales promelas mg/L LC50 flow-through 0.17: 96 h Brachydanio rerio mg/L LC50	0.29: 48 h Daphnia magna mg/L EC50
Potassium carbonate			440 - 880: <24 h Daphnia magna mg/L LC50
Sodium borate	2.6 - 21.8: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 158:	340: 96 h Limanda limanda mg/L LC50	1085 - 1402: 48 h Daphnia magna mg/L LC50

	96 h Desmodemus subspicatus mg/L EC50		
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Chronic aquatic toxicity

Product Information

No information available.

Component Information

No information available.

12.2 Persistence and degradability

No data is available on the product itself. 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
Diethylene glycol	-1.98
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

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 in accordance with local 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	Dispose of in accordance with local regulations.
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.

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.

IMDG/IMO

14.1. UN/ID no	UN3082
14.2. Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s
Technical Name	Hydroquinone
14.3. Hazard class	9
14.4. Packing Group	III
14.5. Marine pollutant	Hydroquinone
14.6. Special Provisions	274, 335
EmS	F-A, S-F

ADR/RID

14.1. UN/ID no	UN3082
14.2. Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s
Technical Name	Hydroquinone
14.3. Hazard class	9
14.4. Packing Group	III
14.5. Classification Code	M6
14.6. Special Provisions	274, 335, 601, 375
ADR/RID-Labels	9

ICAO/IATA

14.1. UN/ID no	UN3082
14.2. Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s
Technical Name	Hydroquinone
14.3. Hazard class	9
14.4. Packing Group	III
14.5. ERG Code	9L
14.6. Special Provisions	A97, A158, A197

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

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.

International Inventories

"Does not comply" indicates a component is either not on the public inventory or is subject to exemption requirements. If additional information is needed contact Carestream Health.

EINECS/ELINCS	Complies
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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 Chemical Safety Assessment has been carried out for this substance/mixture.

16. OTHER INFORMATION

Full text of H-Statements referred to under section 3

H302 - Harmful if swallowed
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled
H318 - Causes serious eye damage
H317 - May cause an allergic skin reaction
H341 - Suspected of causing genetic defects if inhaled
H351 - Suspected of causing cancer if inhaled
H400 - Very toxic to aquatic life
H360FD - May damage fertility. May damage the unborn child
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

Revision Date 22 September 2017

Revision Note (M)SDS sections updated

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.

XTable Placeholder