

SAFETY DATA SHEET

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Revision Number 2.01

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

Product name: GBX Developer and Replenisher

Product Code(s) 5158621

Supplier Carestream Health, Inc., 150 Verona Street, Rochester, NY, USA 14608

Emergency telephone number
 CHEMTREC: +1-703-527-3887 (INTERNATIONAL)
 1-800-424-9300 (NORTH AMERICA)

For other information contact: 800-328-2910

Synonyms PCD 4861

Recommended Use Restricted to professional users. Photographic chemical.


2. HAZARDS IDENTIFICATION

Classification

Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 2
Specific target organ toxicity (repeated exposure)	Category 2

Label elements

Emergency Overview

Signal word	Danger
<p>Hazard statements Causes serious eye damage May cause an allergic skin reaction Suspected of causing genetic defects Suspected of causing cancer May cause damage to organs through prolonged or repeated exposure</p>	
	
Contains Hydroquinone	
Appearance No information available	Physical state liquid
	Odor Odorless

Precautionary Statements - Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe

dust/fume/gas/mist/vapors/spray. Use personal protective equipment as required. Contaminated work clothing should not be allowed out of the workplace.

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes. Immediately call a POISON CENTER or doctor/physician.

Skin

IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Precautionary Statement - Storage

Store locked up.

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC)

- Not applicable

Other hazards which do not result in classification

May be harmful if swallowed. Very toxic to aquatic life.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms

PCD 4861.

Chemical name	CAS No.	Weight-%	Trade Secret
Diethylene glycol 111-46-6	111-46-6	5-<10	*
Hydroquinone 123-31-9	123-31-9	5-8	*
Sodium borate 1330-43-4	1330-43-4	0.1-<1	*

*The exact percentages (concentrations) have been withheld as trade secrets.

4. FIRST AID MEASURES

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.

Inhalation

Move victim to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

Ingestion

If swallowed, call a poison control center 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.

Protection of First-aiders

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

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. Causes serious eye irritation.

Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

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

Unsuitable Extinguishing Media

Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Some may burn but none ignite readily. Those substances designated with a "P" may polymerize explosively when heated or involved in a fire. Some may be transported hot.

Hazardous combustion products

Carbon oxides. Sulfur oxides.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation. Avoid contact with the skin and the eyes. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personal protection see section 8.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent entry into waterways, sewers, basements or confined areas. Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up

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

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.

7. HANDLING AND STORAGE

Precautions for safe handling

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

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions	Keep container tightly closed in a dry and well-ventilated place. Incompatible with oxidizing agents.
Incompatible products	Strong oxidizing agents. Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical name	ACGIH TLV	AIHA - Workplace Environmental Exposure Levels (WEELs) - TWAs	OSHA PEL	Advisory OEL
Diethylene glycol 111-46-6	-	TWA: 10 mg/m ³	-	
Hydroquinone 123-31-9	TWA: 1 mg/m ³		TWA: 2 mg/m ³	
Sodium borate 1330-43-4	STEL 6 mg/m ³ TWA: 2 mg/m ³		-	

Appropriate engineering controls

Engineering Measures	Ensure adequate ventilation. 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. Showers, eyewash stations, and ventilation systems.
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Individual protection measures, such as personal protective equipment

Eye/Face Protection	Tightly fitting safety goggles Face-shield.
Skin and body protection	Wear protective gloves/clothing. Skin contact should be prevented through use of suitable protective clothing, gloves, and footwear, selected with regard of use conditions and exposure potential.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.
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.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid	Odor	Odorless
Appearance	No information available	Odor threshold	No information available
Color	light yellow		
Property	Values	Remarks • Method	
pH	10.2	No information available	
Melting point / 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 data available		
Upper flammability limit:	Unknown		
Lower flammability limit:	Not flammable		
Vapor pressure	24 mbar @ 20 °C	No information available	

Vapor density	0.6	No information available
Specific Gravity		No information available
Water solubility	completely soluble	No information available
Solubility(ies)		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Kinematic viscosity		No information available
Dynamic viscosity		No information available
Oxidizing Properties	No information available	
Explosive properties	No information available	

Other information

Softening point		No information available
Molecular weight		No information available
Liquid Density		No information available
Bulk density		No information available

10. STABILITY AND REACTIVITY**Reactivity**

Not applicable.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Contact with strong acids liberates sulfur dioxide.

Conditions to Avoid

None known.

Incompatible Materials

Strong oxidizing agents. Acids.

Hazardous decomposition products

Carbon oxides, Sulfur oxides.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure****Product Information**

Inhalation	May cause irritation of respiratory tract. Contact with strong acids liberates sulfur 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
OPERATOR
VALUE

Similar formulation:
>
2000

Toxicology data for the components

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Diethylene glycol 111-46-6	12565 mg/kg (Rat)	11890 mg/kg (Rabbit)	-
Hydroquinone 123-31-9	375 mg/kg (Rat) Oral LD50 Rat 375 mg/kg (Source: ECHA)	> 4800 mg/kg (Rat)	-
Sodium borate 1330-43-4	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)	-

Information on toxicological effects

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

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

Sensitization 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 sensitization by skin contact.

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.

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

Chemical name	ACGIH	IARC	NTP	OSHA
Hydroquinone 123-31-9	A3			

ACGIH: (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen

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

STOT - single exposure No information available

STOT - repeated exposure No information available

Chronic toxicity Effects expected to be similar to those seen acutely.

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

Aspiration Hazard No information available.

Numerical measures of toxicity - Product Information**Unknown acute toxicity**

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

ATEmix (oral) 2024 mg/kg

ATEmix (dermal) 11001 mg/kg ppm

ATEmix (inhalation-dust/mist) 73.7 mg/L

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

12. ECOLOGICAL INFORMATION**Ecotoxicity**

3% of the mixture consists of component(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

Diethylene glycol 111-46-6		75200: 96 h Pimephales promelas mg/L LC50 flow-through		84000: 48 h Daphnia magna mg/L EC50
Hydroquinone 123-31-9	0.335: 72 h Pseudokirchneriella subcapitata mg/L EC50 13.5: 120 h Desmodemus 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
Sodium borate 1330-43-4	2.6 - 21.8: 96 h Pseudokirchneriella subcapitata mg/L EC50 static 158: 96 h Desmodemus subspicatus mg/L EC50	340: 96 h Limanda limanda mg/L LC50		1085 - 1402: 48 h Daphnia magna mg/L LC50

Persistence and degradability

No data is available on the product itself. Expected to be readily biodegradable.

Bioaccumulation:

No information available.

Chemical name	log Pow
Diethylene glycol 111-46-6	-1.98
Hydroquinone 123-31-9	0.5

13. DISPOSAL CONSIDERATIONS

Waste treatment methods**Waste Disposal Methods**

Should not be released into the environment. Dispose of in accordance with local regulations.

Contaminated packaging

Do not re-use empty containers. Dispose of in accordance with local regulations.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

The information given below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions. Please consult the product packaging for further details.

DOT

UN Number	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Technical Name	Hydroquinone
Hazard class	9
Packing Group	III
Special Provisions	8, 146, 173, 335, IB3, T4, TP1, TP29
Emergency Response Guide Number	171
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s (Hydroquinone), 9, III, RQ UN3082, Environmentally hazardous substance, liquid, n.o.s. (Hydroquinone), 9, III, RQ

TDG

UN Number	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Technical Name	Hydroquinone
Hazard class	9
Packing Group	III
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Hydroquinone), 9, III UN3082, Environmentally hazardous substance, liquid, n.o.s. (Hydroquinone), 9, III

IATA

UN Number	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Technical Name	Hydroquinone
Hazard class	9
Packing Group	III
ERG Code	9L
Special Provisions	A97, A158, A197
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Hydroquinone), 9, PG III, Limited Quantity UN3082, Environmentally hazardous substance, liquid, n.o.s. (Hydroquinone), 9, III

IMDG

UN Number	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Technical Name	Hydroquinone
Hazard class	9
Packing Group	III
EmS-No.	F-A, S-F
Special Provisions	274, 335
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Hydroquinone), 9, III UN3082, Environmentally hazardous substance, liquid, n.o.s. (Hydroquinone), 9, III
Marine pollutant	Hydroquinone

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

15. REGULATORY INFORMATION

"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.

International Inventories

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

Legend

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

U.S. Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical name	SARA 313 - Threshold Values %
Hydroquinone - 123-31-9	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPS) (see 40 CFR 61)

This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:

Chemical name	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Diethylene glycol - 111-46-6		Group I		
Hydroquinone - 123-31-9		Group I		

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	SARA Product RQ
Hydroquinone	100 lb	100 lb	

TSCA

Component	U.S. - TSCA (Toxic Substances Control Act) - Section 8(d) - 716.120(a) - Health and Safety Reporting - List of Substances
Hydroquinone 123-31-9 (5-8)	10/04/1984

U.S. State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Diethylene glycol			X		X
Hydroquinone	X	X	X	X	X
Sodium borate	X		X		

International Regulations**Mexico - Grade** Moderate risk, Grade 2

Chemical name	Carcinogen Status	Exposure Limits
Sodium borate		Mexico: TWA 1 mg/m ³

16. OTHER INFORMATION

NFPA
HMIS

Health Hazard 2
Health Hazard 2*

Flammability 1
Flammability 1

Instability -
Physical Hazard 0

Revision Date

10/01/2017

Revision Note

(M)SDS sections updated

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.

End of Safety Data Sheet