

# SAFETY DATA SHEET

Issuing date 2014-04-02

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Version 1

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

**Product name:** GBX Developer and Replenisher

**Product code:** 1900984

**Supplier** Carestream Health, Inc., 150 Verona Street, Rochester, New York 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  
**Product Use:** Photographic chemical. Restricted to professional users.

## 2. HAZARDS IDENTIFICATION

### Classification

Serious eye damage/eye Irritation	Category 1
Skin Sensitization	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 2

### Label elements

#### Emergency Overview

<b>Signal word</b>	Danger
<b>hazard statements</b>	Causes serious eye damage May cause an allergic skin reaction Suspected of causing genetic defects Suspected of causing cancer



**Appearance** Liquid, light yellow

**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. Use personal protective equipment as required. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.

**Precautionary Statement - Response**

IF exposed or concerned: Get medical advice/attention.

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. 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 in a closed container.

**Precautionary Statements - Disposal**

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

**Hazards not otherwise classified (HNOC)**

- Not applicable

**Other Information**

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

9.7% of the mixture consists of ingredient(s) of unknown toxicity

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms**

PCD 4861.

Chemical Name	CAS-No	Weight %	Trade Secret
Water 7732-18-5	7732-18-5	60-70	*
Potassium sulfite 10117-38-1	10117-38-1	5-10	*
Diethylene glycol 111-46-6	111-46-6	5-10	*
Hydroquinone 123-31-9	123-31-9	5-10	*
Sodium sulfite 7757-83-7	7757-83-7	5-10	*
Potassium carbonate 584-08-7	584-08-7	1-5	*
Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]-, pentasodium salt 140-01-2	140-01-2	1-5	*
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**

If symptoms persist, call a physician.

<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately if symptoms occur.
<b>Skin contact</b>	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.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.
<b>Ingestion</b>	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.
<b>Protection of First-aiders</b>	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.

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

**Notes to physician** Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**

Dry chemical, CO<sub>2</sub>, water spray or regular foam.

**Unsuitable Extinguishing Media**

Do not scatter spilled material with high pressure water streams.

**Specific hazards arising from the chemical**

Thermal decomposition can lead to release of toxic and corrosive gases/vapors.

**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. For personal protection see section 8.

**Environmental precautions**

**Environmental precautions** Prevent further leakage or spillage if safe to do so. 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 <sup>3</sup>	-	
Hydroquinone 123-31-9	TWA: 1 mg/m <sup>3</sup>		TWA: 2 mg/m <sup>3</sup>	
Sodium borate 1330-43-4	STEL 6 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup>		-	

**Appropriate engineering controls**

**Engineering Measures** Ensure adequate ventilation. Apply technical measures to comply with the occupational exposure limits. Showers. Eyewash stations.

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection** Safety glasses with side-shields. If splashes are likely to occur, wear.. Goggles.

**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. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene measures** When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Keep away from food, drink and animal feeding stuffs. Remove and wash contaminated clothing before re-use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state</b>	liquid	<b>Odor</b>	Odorless
<b>Appearance</b>	Liquid, light yellow	<b>Odor Threshold</b>	No information available
<b>Color</b>	light yellow		

<u>Property</u>	<u>Values</u>	<u>Remarks/ • Method</u>
<b>ph</b>	10.2	No information available
<b>Melting point/range:</b>		No information available
<b>Boiling point/boiling range</b>	> 100 °C	No information available
<b>Flash Point</b>	> 93.3 °C > 201.200 °F	No information available.
<b>Evaporation rate</b>		No information available
<b>Flammability (solid, gas)</b>		
<b>upper flammability limit</b>		
<b>lower flammability limit</b>		
<b>Vapor pressure</b>	24 mbar @ 20 °C	No information available
<b>Vapor density</b>	0.6	No information available
<b>Specific Gravity</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, kinematic</b>		No information available
<b>Viscosity, dynamic</b>		No information available
<b>Explosive properties</b>	No information available	
<b>Oxidizing Properties</b>	No information available	

#### Other information

<b>Softening point</b>	No information available
<b>Density VALUE</b>	No information available
<b>Bulk Density VALUE</b>	No information available

## 10. STABILITY AND REACTIVITY

#### Reactivity

None under normal use conditions.

#### Chemical stability

Stable under recommended storage conditions.

#### Possibility of hazardous reactions

Contact with strong acids liberates sulfur dioxide.

#### Conditions to Avoid

Heat, flames and sparks.

#### Incompatible Materials

Strong oxidizing agents. Acids.

#### Hazardous Decomposition Products

Carbon oxides, Sulfur oxides.

## 11. TOXICOLOGICAL INFORMATION

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

<b>Inhalation</b>	No hazard from product as supplied. 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.
<b>Eye contact</b>	Irritating to eyes.
<b>Skin contact</b>	May cause skin irritation and/or dermatitis. Prolonged or repeated contact may dry skin and cause irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
<b>Ingestion</b>	May be harmful if swallowed. May cause adverse kidney effects. May cause central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea.

**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	320 mg/kg ( Rat ) Oral LD50 Rat 320 mg/kg (Source: IUCLID)	> 4800 mg/kg (Rat)	-
Sodium sulfite 7757-83-7	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)
Potassium carbonate 584-08-7	1870 mg/kg ( Rat ) Oral LD50 Rat 1870 mg/kg (Source: IUCLID)	>2000 mg/kg ( Rabbit )	-
Sodium borate 1330-43-4	2660 mg/kg ( Rat ) Oral LD50 Rat 2660 mg/kg (Source: IUCLID)	2000 mg/kg ( Rabbit ) Dermal LD50 Rabbit >2000 mg/kg (Source: IUCLID)	-

Chemical Name	Other applicable information
Potassium sulfite	Moderate skin irritation
Diethylene glycol	Mild skin irritation Mild eye irritation Can cause kidney damage and CNS effects following ingestion. Repeated oral exposure to high doses can cause liver damage.
Hydroquinone	Moderate eye irritation Causes sensitization on guinea-pigs. Mild skin irritation Can be absorbed through skin. (1.1 ug/cm2/hr) Negative in bacterial mutagenicity assays. Evidence for mutagenicity (chromosome breakage, sister-chromatid exchanges) in in vivo and in vitro animal studies. Hydroquinone has been classified as a Category 3 mutagen and carcinogen by the European Union based on testing of rats and mice given hydroquinone by stomach tube or at high dietary levels. The International Agency for Research on Cancer (IARC) under ranking for cancer potential has classified hydroquinone in Group 3, i.e. "not classifiable" as a carcinogen. In the European Union a Category 3 mutagen attracts the risk phrase R68 "Possible risk of irreversible effects" at concentrations above 1%, and a Category 3 carcinogen attracts the risk phrase R40 "Limited evidence of a carcinogenic effect" at concentrations above 1%. Exposure to products containing such substances should be controlled to below established control limits and special care should be taken with pregnant or breast-feeding women to ensure appropriate controls are in place to control the risk.

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.

### 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** 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.

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** Skin, Eyes, Respiratory system, Central nervous system, Kidney, Liver.

**Aspiration Hazard** No information available.

### Numerical measures of toxicity - Product Information

**Unknown acute toxicity** 9.7% of the mixture consists of ingredient(s) of unknown toxicity

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

**ATEmix (oral)** 2079 mg/kg (ATE)

**ATEmix (dermal)** 30560 mg/kg (ATE)

**ATEmix (inhalation-dust/mist)** 59.9 mg/L (ATE)

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

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	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

Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]-, pentasodium salt 140-01-2	2.6: 72 h Desmodesmus subspicatus mg/L EC50	1005 - 1250: 96 h Lepomis macrochirus mg/L LC50 static 300: 96 h Pimephales promelas mg/L LC50 static		500: 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 Desmodesmus 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
Sodium sulfite 7757-83-7	-4
Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]-, pentasodium salt 140-01-2	-3.05

**Other adverse effects**

No information available

### 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.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Hydroquinone 123-31-9		Included in waste stream: K060		

### 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**

<b>UN/ID No</b>	UN3082
<b>Proper Shipping Name</b>	Environmentally hazardous substances, liquid, n.o.s.
<b>Technical Name</b>	Hydroquinone
<b>Hazard class</b>	9
<b>Packing Group</b>	III
<b>Special Provisions</b>	8, 146, 335, IB3, T4, TP1, TP29
<b>Emergency Response Guide Number</b>	171



**TDG**

<b>UN/ID No</b>	UN3082
<b>Proper Shipping Name</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>Technical Name</b>	Hydroquinone
<b>Hazard class</b>	9
<b>Packing Group</b>	III

**ICAO/IATA**

<b>UN/ID No</b>	UN3082
<b>Proper Shipping Name</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>Technical Name</b>	Hydroquinone
<b>Hazard class</b>	9
<b>Packing Group</b>	III
<b>ERG Code</b>	9L
<b>Special Provisions</b>	A97, A158

**IMDG/IMO**

<b>UN/ID No</b>	UN3082
<b>Proper Shipping Name</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>Technical Name</b>	Hydroquinone
<b>Hazard class</b>	9
<b>Packing Group</b>	III
<b>EmS No.</b>	F-A, S-F
<b>Special Provisions</b>	179, 274, 335, 909

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

## 15. REGULATORY INFORMATION

**International Inventories**

<b>TSCA</b>	Complies
<b>DSL/NDSL</b>	Complies
<b>EINECS/ELINCS</b>	Complies
<b>ENCS</b>	Complies
<b>IECSC</b>	Complies
<b>KECL</b>	Complies
<b>PICCS</b>	Complies
<b>AICS</b>	Complies
<b>NZIoC</b>	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**

<b>Acute Health Hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire Hazard</b>	Yes
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	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 ( 5-10 )	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
Hydroquinone	A3	Mexico: TWA 2 mg/m <sup>3</sup>
Sodium borate		Mexico: TWA 1 mg/m <sup>3</sup>

**16. OTHER INFORMATION****NFPA**  
**HMIS**Health Hazard 2  
Health Hazard 2\*Flammability 1  
Flammability 1Instability 0  
Physical Hazard 0Issuing date 2014-02-05  
Revision Date 2014-04-02  
Revision Note Update to OSHA GHS SDS format**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**