

SAFETY DATA SHEET

Revision Date 03/23/2018

Revision Number 3.01

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

Product name: GBX Developer and Replenisher

Product Code(s) 5158613DEV

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

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



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.

Precautionary Statement - Response

IF exposed or concerned: Get medical advice/attention. Specific treatment (see this label).

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)

- May be harmful if swallowed

Other hazards which do not result in classification

No information available

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	*
Sodium sulfite 7757-83-7	7757-83-7	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

In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Skin contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.

Inhalation

Administer oxygen if breathing is difficult. Move victim to fresh air. Apply artificial respiration if victim is not breathing.

Ingestion	Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get medical attention.
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 Causes eye burns. May cause an allergic skin reaction. Irritation. Rashes. Hives.

Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically. May cause sensitization of susceptible persons.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Dry chemical, CO₂, water spray or regular foam. Water spray, fog or regular foam. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal.

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 Do not touch or walk through spilled material. Stop leak if you can do it without risk. Avoid inhalation of asbestos dust.

Other information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Prevent dust cloud.

Methods for cleaning up With clean shovel place material into clean, dry container and cover loosely; move containers from spill area. Take up with sand or other noncombustible absorbent material and place into containers for later disposal. Cover liquid spill with sand, earth or other noncombustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading.

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. Handle in accordance with good industrial hygiene and safety practice. In case of insufficient ventilation, wear suitable respiratory equipment. Wear personal protective equipment.

Conditions for safe storage, including any incompatibilities**Technical measures/Storage conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Incompatible products

None known based on information supplied.

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. Ensure that eyewash stations and safety showers are close to the workstation location.

Individual protection measures, such as personal protective equipment**Eye/Face Protection**

Tightly fitting safety goggles. Face-shield.

Skin and body protection

Long sleeved clothing. Protective gloves. 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

None required under normal usage. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures

When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. 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
Appearance
Color

Liquid
No information available
light yellow

Odor
Odor threshold

Odorless
No information available

Property

pH
Melting point / freezing point

Values
10.2

Remarks • Method

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

None known based on information supplied.

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	Causes serious eye damage.
Skin contact	May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Avoid contact with skin.
Ingestion	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.

Oral LD50
OPERATOR
VALUE

Similar formulation:
>
2000

Toxicology data for the components

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	90,000 mg/kg (Rat)	-	-
Potassium sulfite 10117-38-1	>3200 mg/kg (rat)	-	-
Diethylene glycol 111-46-6	12565 mg/kg (Rat)	11890 mg/kg (Rabbit)	4600 mg/m ³ (Rat) 4 h Inhalation LC50 Rat >4600 mg/m ³ 4 h (aerosol, Source: NICNAS)
Sodium sulfite 7757-83-7	5680 mg/kg (Rat) Oral LD50 Rat 5680 mg/kg (Source: OECD SIDS)	-	22 mg/L (Rat) 1 h Inhalation LC50 Rat >22 mg/L 1 h (Source: IUCLID)
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)	2 mg/m ³ (Rat) 4 h Inhalation LC50 Rat >2 mg/m ³ 4 h (Source: HSDB)

Information on toxicological effects

Symptoms Causes severe eye damage. Allergic skin reactions including rash, dermatitis, irritation, and itching.

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

Corrosivity Risk of serious damage to eyes.
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 Contains a known or suspected mutagen.
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 May cause damage to organs, See target organs listed below
STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure, See listed target organs below

Chronic toxicity Effects expected to be similar to those seen acutely. Avoid repeated exposure. Possible risks of irreversible effects.

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

Aspiration Hazard No information available.

Numerical measures of toxicity - Product Information

No information available

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

ATEmix (oral) 2211 mg/kg
 ATEmix (dermal) 13161 mg/kg
 ATEmix (inhalation-dust/mist) 79.7 mg/L

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

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Potassium sulfite 10117-38-1		220 - 460: 96 h Leuciscus idus mg/L LC50 static		
Diethylene glycol 111-46-6		75200: 96 h Pimephales promelas mg/L LC50 flow-through		84000: 48 h Daphnia magna mg/L EC50
Sodium sulfite 7757-83-7		220 - 460: 96 h Leuciscus idus mg/L LC50 static		330: 24 h Psammechinus miliaris mg/L LC50
Hydroquinone 123-31-9	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
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
Sodium sulfite 7757-83-7	-4
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.

<u>DOT</u>	Not regulated
<u>TDG</u>	Not regulated
<u>IATA</u>	Not regulated
<u>IMDG</u>	Not regulated

The "environmentally hazardous substances (UN3082 and UN3077) shipped in Limited Quantities (net quantity of less than 5 L or 5 kg) are deemed "Not Restricted" (not regulated) for DGR.

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	Does not comply
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** Serious risk, Grade 3

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

16. OTHER INFORMATION

NFPA	Health Hazard 3	Flammability 1	Instability -
HMIS	Health Hazard 3	Flammability 1	Physical Hazard 0

Revision Date 03/23/2018
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