Carestream DENTAL

SAFETY DATA SHEET

according to NOHSC:2011(2003)

Issuing Date No data available **Revision date** 2013-09-18 **Version** 2

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product Identifier

Product code: 4037206

Product name: GBX Developer and Replenisher
KODAK GBX Developer and Replenisher

Contains Potassium carbonate, Hydroquinone

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 Australia Pty Ltd., 27 Church Street, Richmond, Victoria, 3121

For further information, please contact:

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

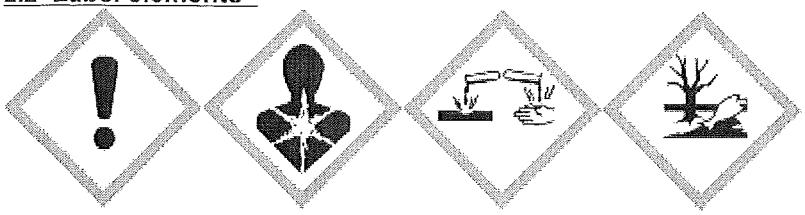
1.4 Emergency Telephone Number

+(61)-290372994

2.1 Classification of the substance or mixture

Acute oral toxicity	Category 4
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

hazard statements
H302 - Harmful if swallowed
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
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P273 - Avoid release to the environment
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P308 + P313 - IF exposed or concerned: Get medical advice/ attention
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
P363 - Wash contaminated clothing before re-use
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell
P330 - Rinse mouth
P405 - Store locked up
P501 - Dispose of contents/ container to an approved incineration plant

2.3 other information

Physical-Chemical Properties — Contact with strong acids liberates sulphur dioxide.

Properties Affecting Health — May cause irritation of respiratory tract. 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

Hazardous components

Chemical name	CAS-No	Weight percent
Potassium sulfite	10117-38-1	5-10
Diethylene glycol	111-46-6	5-10
Hydroquinone	123-31-9	5-10
Sodium sulfite	7757-83-7	5-10
Potassium carbonate	584-08-7	1-5
Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]-, pentasodium salt	140-01-2	1-5
Sodium borate	1330-43-4	0.1-1

Non-hazardous ingredients

Chemical name	CAS-No	Weight percent
Water	7732-18-5	60-70

4. First aid measures

4.1 Description of first aid measures

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 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 Coughing and/ or wheezing. Irritation. rash.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. Fire-fighting measures

5.1 Extinguishing media.

Suitable Extinguishing Media
Dry chemical, CO_2, water spray 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 fire-fighters.

Special protective equipment for fire-fighters
As in any fire, wear self-contained breathing apparatus and full protective gear.

Hazchem Code

Component	Hazchem Code
Hydroquinone 123-31-9 (5-10)	2Z
Sodium borate 1330-43-4 (0.1-1)	2X 3W 3WE

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. For personal protection see section 8.

See Section 12 for additional information.

6.2 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.

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

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

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end uses

Specific use(s) Photographic chemical.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits

Chemical name	Australia	ACGIH TLV	The United Kingdom	Germany
Diethylene glycol	TWA 23 ppm TWA 100 mg/m³	-	STEL 69 ppm STEL 303 mg/m³ TWA 23 ppm TWA 101 mg/m³	AGW 10 ppm AGW 44 mg/m³
Hydroquinone	TWA 2 mg/m³	TWA: 1 mg/m³	STEL 1.5 mg/m³ TWA 0.5 mg/m³	
Sodium borate	TWA 1 mg/m³	STEL 6 mg/m³ TWA: 2 mg/m³	STEL 3 mg/m³ TWA 1 mg/m³	

Biological standards

No information available

8.2 Exposure controls

Engineering measures Ensure adequate ventilation. Apply technical measures to comply with the occupational exposure limits.

Personal Protective Equipment

Eye Protection If splashes are likely to occur, wear:. Tightly fitting safety goggles.

Hand Protection Impervious gloves.

Skin and Body Protection Wear suitable protective clothing.

Respiratory protection None under normal use conditions. In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit. Wear a positive-pressure supplied-air respirator with full facepiece.

Other Protective Equipment	Ensure that eyewash stations and safety showers are close to the workstation location.
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.
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	Note - 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	> 93 °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
vapour pressure	24 mbar @ 20 °C	No information available
Vapour Density	0.6	No information available
Relative Density	1.230	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

softening point	No information available
Molecular weight	No information available
Density	No information available
Bulk Density	No information available

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

Heat, flames and sparks.

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 — No hazard from product as supplied. 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. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION.

INGESTION — HARMFUL IF SWALLOWED. May cause adverse kidney effects. May cause central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea.

Acute Toxicity - Component Information

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Diethylene glycol	12565 mg/kg (Rat)	11890 mg/kg (Rabbit)	
Hydroquinone	320 mg/kg (Rat)	> 4800 mg/kg (Rat)	
Sodium sulfite	820 mg/kg (Rat)		22 mg/L (Rat) 1 h 5.5 mg/L (Rat) 4 h
Potassium carbonate	1870 mg/kg (Rat)	>2000 mg/kg (Rabbit)	
Sodium bromide	3400 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	
Sodium borate	2403 mg/kg (Rat)	2000 mg/kg (Rabbit)	
3-Pyrazolidinone, 4-(hydroxymethyl)-4-methyl-1-phenyl-	566 mg/kg (Rat)		

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 sensitisation 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 bromide	Ingestion of bromide salts can cause nausea, vomiting, headache, irritability, delirium, memory loss, decreased appetite, joint pain, hallucinations, stupor, coma, and acne like rash on face, legs, and trunk.
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.
3-Pyrazolidinone, 4-(hydroxymethyl)-4-methyl-1-phenyl-	Mild skin irritation Skin sensitisation Slight Eye irritation Strong Based on repeated-dose ingestion studies in animals, this chemical may cause blood, testicular, and adverse reproductive effects.

Chronic Toxicity

carcinogenicity Contains a known or suspected carcinogen.

sensitisation 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 skin. EYES. Respiratory System. Central nervous system. kidney. liver.

12.1 Toxicity

Ecotoxicity effects VERY TOXIC TO AQUATIC ORGANISMS.

Product Information
No information available.

Component Information

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Potassium sulfite		LC50 220 - 460 mg/L Leuciscus idus 96 h	
Diethylene glycol		LC50= 75200 mg/L Pimephales promelas 96 h	EC50 = 84000 mg/L 48 h (Daphnia magna)
Hydroquinone	13.5 mg/L EC50 120 h (Desmodesmus subspicatus) 0.335 mg/L EC50 72 h (Pseudokirchneriella subcapitata)	LC50= 0.044 mg/L Oncorhynchus mykiss 96 h LC50= 0.044 mg/L Pimephales promelas 96 h LC50 0.1 - 0.18 mg/L Pimephales promelas 96 h LC50= 0.17 mg/L Brachydanio rerio 96 h	EC50 = 0.29 mg/L 48 h (Daphnia magna)
Sodium sulfite		LC50 220 - 460 mg/L Leuciscus idus 96 h	LC50 = 330 mg/L 24 h (Psammechinus miliaris)
Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]-, pentasodium salt	2.6 mg/L EC50 72 h (Desmodesmus subspicatus)	LC50> 300 mg/L Pimephales promelas 96 h LC50 1005 - 1250 mg/L Lepomis macrochirus 96 h	EC50 > 500 mg/L 48 h (Daphnia magna)
Sodium borate	158 mg/L EC50 96 h (Desmodesmus subspicatus) 2.6 - 21.8 mg/L EC50 96 h (Pseudokirchneriella subcapitata)	LC50= 340 mg/L Limanda limanda 96 h	LC50 1085 - 1402 mg/L 48 h (Daphnia magna)

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
Sodium sulfite	-4
Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]-, pentasodium salt	-3.05

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

Waste from residues / unused products	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.
Advice on safe handling	See Section 8 for more detail

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.

ADG

UN Number	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s
Technical Name	Hydroquinone
Hazard Class	9
Packing Group	III
Special Provisions	179, 274, 331, 335, AU01

Component	**Hazchem Code**
Hydroquinone 123-31-9 (5-10)	2Z
Sodium borate 1330-43-4 (0.1-1)	2X 3W 3WE

ICAO/IATA

UN/ID no	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

IMDG/IMO

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

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

15. Regulatory information

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

International Inventories

EINECS/ELINCS	Complies
TSCA	Complies
DSL/NDSL	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

National regulatory information

Australia

Chemical name	Australia - Standard for the Uniform Scheduling of Drugs and Poisons - Schedule 2
Diethylene glycol - 111-46-6	Schedule 5 Schedule 6
Hydroquinone - 123-31-9	1, 4 (except when in Schedule 2 or 4) 45 (when included in Schedule 2) A (when included in Schedule 2); A, G2, G3, E2, R2, S1 (when included in Schedule 4 or 6) Schedule 2 Schedule 6
Potassium carbonate - 584-08-7	4 Schedule 5 Schedule 6

Component	Australia - National Pollutant Inventory (NPI) Substance List
Diethylene glycol 111-46-6 (5-10)	20 60000 1 25 400 2000
Hydroquinone 123-31-9 (5-10)	20 60000 1 25 400 2000

16. Other information

Revision date 2013-09-18

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.