Carestream DENTAL

SAFETY DATA SHEET

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

Identification of the substance or mixture

Product name: READYMATIC Developer and Replenisher
KODAK READYMATIC DENTAL Developer and Replenisher

Product code: 6610117DEV
Pure substance/mixture Mixture

Use of the Substance/Mixture

Product Use: Photographic chemical.

Company/Undertaking Identification

Supplier Carestream Health Japan Co., Ltd., 2-27-1 Shinkawa, Chuo-ku, Tokyo, Japan

For further information, please contact:
For environment, health and safety information, email: WW-EHS@carestreamhealth.com

Emergency telephone

Emergency telephone +(81)-345209637

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 2
Acute aquatic toxicity	Category 2

GHS Label elements, including precautionary statements

WARNING

Hazard statements
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H341 - Suspected of causing genetic defects
H351 - Suspected of causing cancer
H401 - 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
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P273 - Avoid release to the environment
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
P337 + P313 - If eye irritation persists: Get medical advice/ attention
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 reuse
P391 - Collect spillage
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

Other hazards which do not result in classification

General Hazards
Contact with strong acids liberates sulfur dioxide.
May cause irritation of respiratory tract

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Weight %
Water	80-90
Sodium sulfite	1-5
Hydroquinone	<2.5
Sodium bicarbonate	1-5
Sodium borate	0.1-1

4. FIRST AID MEASURES

Description of necessary first-aid measures

General advice — IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.

Main Symptoms — May cause an allergic skin reaction. Irritation.

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 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.

Most important symptoms/effects, acute and delayed

Skin contact	May cause skin irritation and/or dermatitis.
Eye contact	Causes eye irritation.
Inhalation	No hazard from product as supplied. Contact with strong acids liberates sulfur dioxide. May cause irritation of respiratory tract.
Ingestion	May be harmful if swallowed. 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.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Extinguishing media which shall not be used for safety reasons	None.

Specific hazards arising from the chemical

Special Hazard	Hazardous decomposition products due to incomplete combustion.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters	Wear self-contained breathing apparatus and protective suit.

Other information

Other information	None known.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For personal protection see section 8. Ensure adequate ventilation.

Advice for emergency responders
For personal protection see section 8

Environmental precautions

Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained. Try to prevent the material from entering drains or water courses.

Methods and materials for containment and cleaning up

Prevent further leakage or spillage if safe to do so.
Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Other information

See Section 12 for additional Ecological information.

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.

Materials to Avoid Oxidizing agents. Strong acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits

Chemical Name	Japan	European Union	ACGIH TLV
Hydroquinone	2S+		TWA: 1 mg/m³
Sodium borate			STEL 6 mg/m³ TWA: 2 mg/m³

Appropriate engineering controls

Engineering Measures Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Individual protection measures, such as personal protective equipment (PPE)

Personal Protective Equipment

General Information If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied.

Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment.

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

Skin and body protection	Wear suitable protective clothing. Protective shoes or boots.
Hand Protection	Protective gloves

Hygiene measures When using, do not eat, drink or smoke. Wear suitable gloves and eye/face protection. Wash hands before breaks and at the end of workday. Wash hands with water as a precaution. Regular cleaning of equipment, work area and clothing is recommended. Avoid breathing vapors, mist or gas.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state liquid
ph 10.1
Flash point: Does not flash
Boiling point/boiling range > 100 °C

Odor Odorless
Color colorless
Autoignition temperature: No information available

Vapor Pressure 24 mbar @ 20 °C
Vapor density 0.6
Density No information available
Water Solubility completely soluble
Melting point/range: No information available
Specific Gravity 1.08
Bulk Density: No information available

10. STABILITY AND REACTIVITY

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Contact with strong acids liberates sulfur dioxide.

Conditions to Avoid

Do not freeze.

Materials to Avoid

Oxidizing agents. Strong acids.

Hazardous Decomposition Products

Carbon oxides, Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity - Product Information

Skin contact May cause skin irritation and/or dermatitis.
Eye contact Causes eye irritation.
Inhalation No hazard from product as supplied. Contact with strong acids liberates sulfur dioxide. May cause irritation of respiratory tract.
Ingestion May be harmful if swallowed. 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.

Acute toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity
Oral 5,675.00 mg/kg
Dermal 194,332.00 mg/kg
Inhalation
Gas No information available
Mist 113.90 mg/L ATEmix
Vapor No information available

Acute toxicity - Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	90,000 mg/kg (Rat)		
Sodium sulfite	820 mg/kg (Rat)		22 mg/L (Rat) 1 h 5.5 mg/L (Rat) 4 h
Hydroquinone	320 mg/kg (Rat)	> 4800 mg/kg (Rat)	
Sodium bicarbonate	4220 mg/kg (Rat)		
Sodium borate	2403 mg/kg (Rat)	2000 mg/kg (Rabbit)	

Chemical Name	Other applicable information
Sodium sulfite	No skin irritation Mild eye irritation
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 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.

Aggravated Medical Conditions Preexisting eye disorders, Skin disorders, Respiratory disorders.

Subchronic toxicity

Chronic toxicity

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

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.

Neurological effects No information available.

Target Organ Effects Skin, Eyes, Respiratory system.

CMR Effects

Carcinogenicity Contains a known or suspected carcinogen.

mutagenic effects mutagenic effects.

Chemical Name	European Union	Japan
Hydroquinone 123-31-9		X

12. ECOLOGICAL INFORMATION

Ecotoxicity

Contains a substance which is:: Very toxic to aquatic organisms.

Acute aquatic toxicity Product Information

No information available

Acute aquatic toxicity Component Information

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Sodium sulfite		LC50 220 - 460 mg/L Leuciscus idus 96 h	LC50 = 330 mg/L 24 h (Psammechinus miliaris)
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 bicarbonate	650 mg/L EC50 120 h (Nitzschia linearis)	LC50 8250 - 9000 mg/L Lepomis macrochirus 96 h	EC50 = 2350 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)

Persistence and degradability

No information available

Bioaccumulative potential

No information available

Chemical Name	log Pow
Sodium sulfite	-4
Hydroquinone	0.5

Mobility in soil

No information available

13. DISPOSAL CONSIDERATIONS

Waste from Residues / Unused Products Dispose of in accordance with local regulations.

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

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.

ADR/RID Not regulated

IMDG/IMO Not regulated

ICAO/IATA Not regulated

ADN Not regulated

TDG Not regulated

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

15. REGULATORY INFORMATION

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

Chemical Name	Law on the Evaluation of Chemical Substances and Regulation of their Manufacture, etc.	Pollution Release and Transfer Registry (Class I):	Pollution Release and Transfer Registry (Class II):
Hydroquinone		336	not applicable
Sodium borate		405	not applicable

Chemical Name	Dangerous Substances	organic solvent	Harmful Substances Whose Names Are to be Indicated on the Label	Biological monitoring
Hydroquinone	>0.1 %	not applicable	not applicable	
Sodium borate	>0.1 %	not applicable	not applicable	

16. OTHER INFORMATION

Revision Date 2013-09-13
Revision Note (M)SDS sections updated

Disclaimer

The information provided on this MSDS 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

End of Material Safety Data Sheet