

## 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:** 4980546DEV  
**Pure substance/mixture** Mixture

### Use of the Substance/Mixture

**Product Use:** Photographic chemical.

### Company/Undertaking Identification

**Supplier** Carestream Health Malaysia Sdn. Bhd.  
3A Floor, Suite 18, IOI Business Park, Persiaran Puchong Jaya Selatan, Bandar Puchong  
Jaya 47100 Puchong, Selangor Darul Ehsan

### For further information, please contact:

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

### Emergency telephone

1-800-815-308

## 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  
H341 - Suspected of causing genetic defects  
H351 - Suspected of causing cancer  
H319 - Causes serious eye irritation  
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**

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

## **3. COMPOSITION/INFORMATION ON INGREDIENTS**

<b>Chemical Name</b>	<b>Weight %</b>
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**

<b>General advice</b>	IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.
<b>Main Symptoms</b>	May cause an allergic skin reaction. Irritation.
<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.

#### Most important symptoms/effects, acute and delayed

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

<b>Notes to physician</b>	Treat symptomatically.
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### **5. FIRE-FIGHTING MEASURES**

#### Suitable Extinguishing Media

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

#### Specific hazards arising from the chemical

<b>Special Hazard</b>	Hazardous decomposition products due to incomplete combustion.
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#### Special protective actions for fire-fighters

<b>Special protective equipment for fire-fighters</b>	Wear self-contained breathing apparatus and protective suit.
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#### Other information

<b>Other information</b>	None known.
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### **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	Taiwan	China	ACGIH TLV	European Union
Hydroquinone	STEL 4 mg/m <sup>3</sup>	TWA 1 mg/m <sup>3</sup> STEL 2 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup>	
Sodium borate			STEL 6 mg/m <sup>3</sup> TWA: 2 mg/m <sup>3</sup>	
Potassium hydroxide		Ceiling 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	

### **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**

<b>General Information</b>	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.
<b>Respiratory protection</b>	In case of insufficient ventilation wear suitable respiratory equipment.
<b>Eye Protection</b>	Safety glasses with side-shields. If splashes are likely to occur, wear: Goggles.
<b>Skin and body protection</b>	Wear suitable protective clothing. Protective shoes or boots.
<b>Hand Protection</b>	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

<b>Physical state</b> liquid	<b>Odor</b> Odorless
<b>ph</b> 10.1	<b>Color</b> colorless
<b>Flash point:</b> Does not flash	<b>Autoignition temperature:</b> No information available
<b>Boiling point/boiling range</b> > 100 °C	
<b>Vapor Pressure</b> 24 mbar @ 20 °C	
<b>Vapor density</b> 0.6	
<b>Density</b> No information available	
<b>Water Solubility</b> completely soluble	
<b>Melting point/range:</b> No information available	
<b>Specific Gravity</b> 1.08	
<b>Bulk Density:</b> 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.

<b>Skin contact</b>	May cause skin irritation and/or dermatitis.
<b>Eye contact</b>	Causes eye irritation.
<b>Inhalation</b>	No hazard from product as supplied. Contact with strong acids liberates sulfur dioxide. May cause irritation of respiratory tract.
<b>Ingestion</b>	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.
<b>Acute toxicity</b>	0% of the mixture consists of ingredient(s) of unknown toxicity
<b>Oral</b>	5,675.00 mg/kg
<b>Dermal</b>	194,332.00 mg/kg
<b>Inhalation</b>	
<b>Gas</b>	No information available
<b>Mist</b>	113.90 mg/L ATEmix
<b>Vapor</b>	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.
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**Aggravated Medical Conditions** Preexisting eye disorders, Skin disorders, Respiratory disorders.

Subchronic toxicity  
no data available

Chronic toxicity

**Chronic toxicity**  
**Sensitization**

Effects expected to be similar to those seen acutely.  
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**  
**Target Organ Effects**

No information available.  
Skin, Eyes, Respiratory system.

CMR Effects

**Carcinogenicity** Contains a known or suspected carcinogen.

**mutagenic effects.**

Chemical Name	GHS-Germ cell Mutagenicity	Japan
Hydroquinone	2	

## 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 <i>Leuciscus idus</i> 96 h	LC50 = 330 mg/L 24 h ( <i>Psammecinus miliaris</i> )
Hydroquinone	13.5 mg/L EC50 120 h ( <i>Desmodesmus subspicatus</i> ) 0.335 mg/L EC50 72 h ( <i>Pseudokirchneriella subcapitata</i> )	LC50= 0.044 mg/L <i>Oncorhynchus mykiss</i> 96 h LC50= 0.044 mg/L <i>Pimephales promelas</i> 96 h LC50 0.1 - 0.18 mg/L <i>Pimephales promelas</i> 96 h LC50= 0.17 mg/L <i>Brachydanio rerio</i> 96 h	EC50 = 0.29 mg/L 48 h ( <i>Daphnia magna</i> )
Sodium bicarbonate	650 mg/L EC50 120 h ( <i>Nitzschia linearis</i> )	LC50 8250 - 9000 mg/L <i>Lepomis macrochirus</i> 96 h	EC50 = 2350 mg/L 48 h ( <i>Daphnia magna</i> )
Sodium borate	158 mg/L EC50 96 h ( <i>Desmodesmus subspicatus</i> ) 2.6 - 21.8 mg/L EC50 96 h ( <i>Pseudokirchneriella subcapitata</i> )	LC50= 340 mg/L <i>Limanda limanda</i> 96 h	LC50 1085 - 1402 mg/L 48 h ( <i>Daphnia magna</i> )

**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

<b>EINECS/ELINCS</b>	Complies
<b>TSCA</b>	Complies
<b>DSL/NDSL</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

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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**