

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

#### Identification of the substance or mixture

**Product name:** RP X-OMAT Developer Replenisher, Part A

**Product code:** 6610000A

**Pure substance/mixture** Mixture

**Synonyms** PCD 6159

#### Use of the Substance/Mixture

**Product Use:** Photographic chemical.

**Restrictions on use** - Restricted to professional users

#### Company/Undertaking Identification

Carestream Health Korea Ltd  
 4F Shinyoung B/D 46-10, Jamwon-dong, Seocho-gu, Seoul 137-906, Korea  
 T: +82-2-3438-7300

**For further information, please contact:**

For environment, health and safety information, email: [WW-EHS@carestreamhealth.com](mailto:WW-EHS@carestreamhealth.com)

#### Emergency telephone

Emergency Transportation/CHEMTREC (24 HOUR) 00-308-13-2549

### 2. HAZARDS IDENTIFICATION

#### Classification of the substance or mixture

Acute oral toxicity	Category 4
Skin sensitization	Category 1
Carcinogenicity	Category 2
Acute aquatic toxicity	Category 1

#### GHS Label elements, including precautionary statements



**DANGER**

### **Hazard Statements**

H302 - Harmful if swallowed  
H317 - May cause an allergic skin reaction  
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  
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P272 - Contaminated work clothing should not be allowed out of the workplace  
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection  
P301 + P310 - IF SWALLOWED: 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 reuse  
P308 + P313 - IF exposed or concerned: Get medical advice/ attention  
P273 - Avoid release to the environment  
P391 - Collect spillage  
P501 - Dispose of contents/ container to an approved waste disposal plant

### **Other hazards which do not result in classification**

No information available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Weight %
Water	60-70
Potassium sulfite	20 - 25
Hydroquinone	5 - 10
Diethylene glycol	1 - 5
Sodium borate	0.1-1

## 4. FIRST AID MEASURES

### Description of necessary first-aid measures

<b>General advice</b>	Show this material safety data sheet to the doctor in attendance.
<b>Eye contact</b>	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Call a physician immediately.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
<b>Inhalation</b>	Move victim to fresh air. Apply artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
<b>Ingestion</b>	Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.
<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/effects, acute and delayed

<b>Skin contact</b>	Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
<b>Eye contact</b>	Irritating to eyes. Risk of serious damage to eyes.
<b>Inhalation</b>	May cause irritation of respiratory tract.
<b>Ingestion</b>	Low order of toxicity based on components.

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

**Notes to physician** May cause sensitization of susceptible persons.

**5. FIRE-FIGHTING MEASURES**

**Flash point:** See chapter 9. PHYSICAL AND CHEMICAL PROPERTIES

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** Thermal decomposition can lead to release of irritating gases and vapors.

Special protective actions for fire-fighters

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

Other information

**Other information** Cool containers / tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up

Dike far ahead of liquid spill for later disposal.

Dam up. Cover liquid spill with sand, earth or other noncombustible absorbent material. Use personal protective equipment. Sweep up and shovel into suitable containers for disposal. Cover powder spill with plastic sheet or tarp to minimize spreading. Pick up and transfer to properly labeled containers. Soak up with inert absorbent material.

#### Other information

See Section 12 for additional information.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on safe handling** Avoid breathing vapors or mists. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Wash thoroughly after handling. Use only in area provided with appropriate exhaust ventilation. Wear personal protective equipment.

**Prevention of fire and explosion** Keep from contact with oxidizing materials.

### Conditions for safe storage, including any incompatibilities

**Technical measures/Storage conditions** Keep at temperatures between 5°C and 30°C. Keep container tightly closed in a dry and well-ventilated place. Keep away from direct sunlight.

**Materials to Avoid** Acids. Oxidizing agents. Contact with strong acids liberates sulfur dioxide.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### **Exposure limits**

Chemical Name	Korea
Hydroquinone	TWA 2 mg/m <sup>3</sup>
Sodium borate	TWA 1 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**

##### **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**

If splashes are likely to occur, wear: Safety glasses with side-shields

##### **Skin and body protection**

Wear protective gloves/ protective clothing.

##### **Hand Protection**

Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it. Chemical resistant, impermeable gloves.

### Hygiene measures

When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Provide regular cleaning of equipment, work area and clothing.

**Physical state** liquid

**ph** 11.4

**Flash point:** > 93.3 °C / > 200 °F

**Boiling point/boiling range** > 100 °C

**Odor** Odorless

**Color** light yellow

**Autoignition temperature:** No information available

**Vapor Pressure** 24 mbar @ 20 °C @ 20 °C

**Vapor density** 0.6

**Density** No information available

**Volatile organic compounds (VOC) content** 60 - 65 %

**Water Solubility** completely soluble

**Melting point/range:** No information available

**Specific Gravity** 1.31

**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

Heat, flames and sparks. Do not freeze.

### Materials to Avoid

Acids. Oxidizing agents. Contact with strong acids liberates sulfur dioxide.

### Hazardous Decomposition Products

Carbon oxides, Sulfur oxides.

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity Product Information.

#### **Skin contact**

#### **Eye contact**

#### **Inhalation**

#### **Ingestion**

Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Irritating to eyes. Risk of serious damage to eyes.

May cause irritation of respiratory tract.

Low order of toxicity based on components.

#### **Acute toxicity**

#### **Oral**

#### **Dermal**

0.004% of the mixture consists of ingredient(s) of unknown toxicity

2,767.22 mg/kg

No information available

Acute toxicity - Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	90,000 mg/kg ( Rat )		
Hydroquinone	320 mg/kg ( Rat )	> 4800 mg/kg (Rat)	
Diethylene glycol	12565 mg/kg ( Rat )	11890 mg/kg ( Rabbit )	
Sodium borate	2403 mg/kg ( Rat )	2000 mg/kg ( Rabbit )	
Chemical Name	Other applicable information		
Potassium sulfite	Moderate skin irritation Mild skin irritation -		
Hydroquinone	Moderate eye irritation  Mild skin irritation Causes sensitization on guinea-pigs  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 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.		
Diethylene glycol	Moderate skin irritation 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.		
Sodium carbonate	Mild skin irritation		
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.		
Potassium hydroxide	Severe skin irritation		

**Aggravated Medical Conditions**

Central nervous system, Preexisting eye disorders, Skin disorders, Respiratory disorders, Use of alcoholic beverages may enhance toxic effects.

Subchronic toxicity

no data available

Chronic toxicity

**Chronic toxicity**

Effects expected to be similar to those seen acutely. Contains a known or suspected reproductive toxin

**Sensitization**

This mixture contains hydroquinone which is classified as a dermal sensitizer in some jurisdictions. The 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**

Respiratory system, Central nervous system, Kidney, Liver.

CMR Effects

**Carcinogenicity**

Contains a known or suspected carcinogen.

**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.

**Reproductive toxicity**

Contains ingredients that are suspected reproductive hazards

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful 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
Potassium sulfite		LC50 220 - 460 mg/L <i>Leuciscus idus</i> 96 h	
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> )
Diethylene glycol		LC50= 75200 mg/L <i>Pimephales promelas</i> 96 h	EC50 = 84000 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 data is available on the product itself. Expected to be readily biodegradable.

**Bioaccumulative potential**

No information available

Chemical Name	log Pow
Hydroquinone	0.5
Diethylene glycol	-1.98

### 13. DISPOSAL CONSIDERATIONS

<b>Waste from Residues / Unused Products</b>	Should not be released into the environment. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.
<b>Contaminated packaging</b>	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

<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>Classification Code</b>	M6
<b>ADR/RID-Labels</b>	9
<b>Special Provisions</b>	274, 335, 601
<b>ADR Hazard Id (Kemmler Number)</b>	90
<b>Limited Quantity</b>	LQ7

#### 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>Marine Pollutant</b>	P
<b>EmS No.</b>	F-A, S-F
<b>Special Provisions</b>	179, 274, 335, 909
<b>Limited quantity DFDA</b>	5 L

#### 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
<b>Limited quantity DFDA</b>	30 kg G

#### ADN

<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>Classification Code</b>	M6

**Special Provisions** 274, 335, 601  
**Limited quantity DFDA** LQ7

DOT

**UN/ID No** UN3082  
**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s.  
**Hazard class** 9  
**Packing Group** III  
**Special Provisions** 8, 146, 335, IB3, T4, TP1, TP29

TDG

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

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	Toxic Chemicals Control Law	Toxic Release Inventory Chemicals - Group 1	Toxic Release Inventory Chemicals - Group 2
Hydroquinone	2010-1-610 *	not applicable	not applicable

16. OTHER INFORMATION
-----------------------

Revision Date 2012-03-26  
 Revision Note

**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.**

**End of Material Safety Data Sheet**