Carestream

SAFETY DATA SHEET

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

Identification of the substance or mixture

Product name: RP X-OMAT Developer and Replenisher, Part A
Product code: 6610000A
Pure substance/mixture Mixture

Use of the Substance/Mixture

Product Use: Restricted to professional users, Photographic chemical.

Company/Undertaking Identification

Supplier: Carestream Health Taiwan Limited, 4F-1, No. 129, Sec.2, Zhongshan N. Rd., Zhongshan Dist., Taipei, 10448,Taiwan R.O.C.

Manufacturer: Kodak (Wuxi) Company Ltd,
No. 18, Changjiang Road,
Wuxi, JiangSu Province,
China 214028

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

Emergency telephone

00801-14-8954

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Acute toxicity - Oral	Category 5
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 2
Acute aquatic toxicity	Category 1

GHS Label elements, including precautionary statements

Danger

hazard statements
H303 - May be 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
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P272 - Contaminated work clothing should not be allowed out of the workplace
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 reuse
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant
P312 - Call a POISON CENTER or doctor if you feel unwell

Other hazards which do not result in classification

Contact with strong acids liberates sulfur dioxide.
May cause irritation of respiratory tract
May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination
May cause adverse liver effects
May cause adverse kidney effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

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

4. FIRST AID MEASURES

Description of necessary first-aid measures

General advice — Show this material safety data sheet to the doctor in attendance.

Main Symptoms — Irritation
May cause an allergic skin reaction
Causes eye burns

Eye contact — Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Immediate medical attention is required.

Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. In the case of skin irritation or allergic reactions see a physician.
Inhalation	Move to fresh air. Get medical attention immediately if symptoms occur.
Ingestion	Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

Most important symptoms/effects, acute and delayed

Skin contact	May cause sensitization by skin contact. May cause skin irritation and/or dermatitis. Prolonged or repeated contact may dry skin and cause irritation.
Eye contact	Expected to be severely irritating or corrosive based on components present in the formulation.
Inhalation	No hazard from product as supplied. 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.
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.

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	Water spray. Carbon dioxide (CO_2). Alcohol-resistant foam. Dry chemical.
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 toxic and corrosive gases/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	None known.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For personal protection see section 8. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Wash thoroughly after handling.

Advice for emergency responders
For personal protection see section 8

Environmental precautions

Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Prevent entry into waterways, sewers, basements or confined areas.

Methods and materials for containment and cleaning up

Prevent further leakage or spillage if safe to do so.
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.

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.

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.

Materials to Avoid — Strong oxidizing agents. Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits

Chemical Name	Taiwan	China	ACGIH TLV	European Union
Hydroquinone	STEL 4 mg/m³	TWA 1 mg/m³ STEL 2 mg/m³	TWA: 1 mg/m³	
Sodium borate			STEL 6 mg/m³ TWA: 2 mg/m³	
Potassium hydroxide		Ceiling 2 mg/m³	Ceiling: 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	These recommendations apply to the product as supplied.
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.
Eye Protection	Safety glasses with side-shields. If splashes are likely to occur, wear: Tightly fitting safety goggles.
Skin and body protection	Wear suitable protective clothing.
Hand Protection	Impervious gloves

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state liquid
ph 11.4
Flash point: > 93.3 °C Seta closed cup
Boiling point/boiling range > 100 °C

Odor Odorless
Color light yellow
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 1.31
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.

Materials to Avoid

Strong oxidizing agents. Acids.

Hazardous Decomposition Products

Carbon oxides, Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity Product Information.

Skin contact May cause sensitization by skin contact. May cause skin irritation and/or dermatitis. Prolonged or repeated contact may dry skin and cause irritation.

Eye contact Expected to be severely irritating or corrosive based on components present in the formulation.

Inhalation No hazard from product as supplied. 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.

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.

Unknown acute toxicity 20.54% of the mixture consists of ingredient(s) of unknown toxicity

Oral 2151 mg/kg (ATE)

Dermal 35167 mg/kg (ATE)

Inhalation

Gas No information available

Mist 31.83 mg/L (ATE)

Vapor No information available

Acute toxicity - Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water	90,000 mg/kg (Rat)		
Hydroquinone	320 mg/kg (Rat) Oral LD50 Rat 320 mg/kg (Source: IUCLID)	> 4800 mg/kg (Rat)	
Diethylene glycol	12565 mg/kg (Rat)	11890 mg/kg (Rabbit)	
Sodium carbonate	4090 mg/kg (Rat) Oral LD50 Rat 4090 mg/kg (Source: IUCLID)	Dermal LD50 Mouse 2210 mg/kg (Source: NLM_CIP)	2300 mg/m^3 (Rat) 2 h Inhalation LC50 Rat 2300 mg/m^3 2 h (dust, Source: NLM_CIP)
Sodium sulfite	820 mg/kg (Rat) Oral LD50 Rat 820 mg/kg (Source: IUCLID)		22 mg/L (Rat) 1 h Inhalation LC50 Rat >22 mg/L 1 h (Source: IUCLID)

Sodium borate	2660 mg/kg (Rat) Oral LD50 Rat 2660 mg/kg (Source: IUCLID)	2000 mg/kg (Rabbit) Dermal LD50 Rabbit >2000 mg/kg (Source: IUCLID)	

Chemical Name	**Other applicable information**
Potassium sulfite	Moderate skin 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.
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.
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.

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.

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.

Neurological effects No information available.

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

CMR Effects

Carcinogenicity Contains a known or suspected carcinogen.

Contains a known or suspected mutagen. In vitro tests showed mutagenic effects. In vivo tests showed mutagenic effects.

Chemical Name	GHS-Germ cell Mutagenicity	**Japan**
Hydroquinone	1B	

12. ECOLOGICAL INFORMATION

Ecotoxicity

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
Hydroquinone	0.335: 72 h Pseudokirchneriella subcapitata 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
Diethylene glycol		75200: 96 h Pimephales promelas mg/L LC50 flow-through	84000: 48 h Daphnia magna mg/L EC50
Sodium carbonate		310 - 1220: 96 h Pimephales promelas mg/L LC50 static 300: 96 h Lepomis macrochirus mg/L LC50 static	265: 48 h Daphnia magna mg/L EC50
Sodium borate	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.

Bioaccumulative potential
No information available

Chemical Name	log Pow
Hydroquinone	0.5
Diethylene glycol	-1.98
Sodium sulfite	-4

Mobility in soil
No information available

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

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.

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

UN/ID No	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Technical Name	Hydroquinone
Hazard class	9
Packing Group	III
Classification Code	M6
ADR/RID-Labels	9
Special Provisions	274, 335, 601
ADR Hazard Id (Kemmler Number)	90
Limited Quantity	5L

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

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
Limited quantity DFDA	30 kg G

ADN

UN/ID No	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Technical Name	Hydroquinone
Hazard class	9
Packing Group	III
Classification Code	M6
Special Provisions	274, 335, 601
Limited quantity DFDA	LQ7

TDG

1.45.1 Marine Pollutants Exemption for non Bulk by ground shipments

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

This shipping size falls into limited quantity exemptions that do not require labeling or placarding except if transported by aircraft.

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

16. OTHER INFORMATION

Revision Date	2014-04-08
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.

End of Safety Data Sheet