

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 C
KODAK RP X-OMAT Developer and Replenisher, Part C

Product code: 6610000C

Pure substance/mixture Mixture

Use of the Substance/Mixture

Product Use: Photographic chemical.

Restrictions on use - Restricted to professional users

Company/Undertaking Identification

Carestream Health Korea Ltd
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T: +82-2-3438-7300

For further information, please contact:

For environment, health and safety information, email: 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
Acute inhalation toxicity - gas	Category 4
Skin corrosion/irritation	Category 1 B
Serious eye damage/eye irritation	Category 1
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Acute aquatic toxicity	Category 1
Corrosive to Metals	Category 1

GHS Label elements, including precautionary statements



DANGER

Hazard statements

- H302 - Harmful if swallowed
- H332 - Harmful if inhaled
- H314 - Causes severe skin burns and eye damage
- H317 - May cause an allergic skin reaction
- H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H400 - Very toxic to aquatic life
- H290 - May be corrosive to metals

Precautionary Statements

- P260 - Do not breathe 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
- P271 - Use only outdoors or in a well-ventilated area
- P273 - Avoid release to the environment
- P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
- P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
- P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower
- P363 - Wash contaminated clothing before reuse
- 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
- P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
- P390 - Absorb spillage to prevent material damage
- P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
- P405 - Store locked up
- P501 - Dispose of contents/ container to an approved waste disposal plant

Other hazards which do not result in classification

May form peroxides of unknown stability.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Weight %
Water	40-50
Glutaraldehyde	40-50

Acetic acid	5-10
1H-Indazole, 5-nitro-	1-5

4. FIRST AID MEASURES

Description of necessary first-aid measures

General advice	Immediate medical attention is required. Show this material safety data sheet to the doctor in attendance.
Main Symptoms	Difficulty breathing. Coughing and/ or wheezing. Burning. Rashes. Causes serious eye irritation.
Eye contact	Immediate medical attention is required. Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing. If easy to do, remove contact lens, if worn.
Skin contact	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Seek immediate medical attention/advice.
Ingestion	Do NOT induce vomiting. Rinse mouth. Drink plenty of water. Never give anything by mouth to an unconscious person. Immediate medical attention is required.
Protection of First-aiders	Use personal protective equipment. Avoid contact with skin, eyes and clothing.

Most important symptoms/effects, acute and delayed

Skin contact	Causes burns. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
Eye contact	Causes burns. Corrosive to the eyes and may cause severe damage including blindness.
Inhalation	May cause sensitization by inhalation. Irritating to mucous membranes. Irritating to respiratory system.
Ingestion	Harmful if swallowed. Ingestion causes burns of the upper digestive and respiratory tracts.

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

Notes to physician	May cause sensitization of susceptible persons. Probable mucosal damage may contraindicate the use of gastric lavage. Treat symptomatically.
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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

May form peroxides of unknown stability. Do not allow evaporation to dryness. May cause spontaneous heating and ignition when absorbed on combustible, porous material (e.g. rags, paper, sawdust, cotton, clothing).

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

Use personal protective equipment. For personal protection see section 8. Ensure adequate ventilation. Do not touch or walk through spilled material.

Advice for emergency responders

For personal protection see section 8

Environmental precautions

Do not flush into surface water or sanitary sewer system. Try to prevent the material from entering drains or water courses. Do not allow material to contaminate ground water system.

Methods and materials for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Take up mechanically and collect in suitable container for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains.

Other information

Refer to protective measures listed in Sections 7 and 8.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Wear personal protective equipment. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing.

Prevention of fire and explosion

Keep from contact with oxidizing materials. If peroxide formation is suspected, do not open or move container. Minimize exposure to air. Do not distill or allow to evaporate to near dryness.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions Store in original container. Store in corrosive resistant container with a resistant inliner. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight. Keep at temperatures between 5°C and 30°C. Do not allow evaporation to dryness.

Materials to Avoid Bases. Strong oxidizing agents. Metals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits

Chemical Name	Korea
Glutaraldehyde	Ceiling: 0.05 ppm Ceiling: 0.2 mg/m ³
Acetic acid	STEL 15 ppm STEL 37 mg/m ³ TWA 10 ppm TWA 25 mg/m ³

Appropriate engineering controls

Engineering Measures Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Ensure that eyewash stations and safety showers are close to the workstation location.

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

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Eye Protection

Tightly fitting safety goggles. Face-shield.

Skin and body protection

Impervious gloves. Impervious clothing. Chemical resistant apron. Boots.

Hand Protection

Impervious gloves

Hygiene measures

When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. For environmental protection, remove and wash all contaminated protective equipment before re-use. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state liquid

ph 2.3

Flash point: > 93.600 °C

Boiling point/boiling range > 100 °C

Odor Aldehydes

Color yellow - green

Autoignition temperature: No information available

Vapor Pressure 24 mbar @ 20 °C

Vapor density 1.8

Density 1.116 g/cm³

Water Solubility completely soluble
Melting point/range: No information available
Specific Gravity 1.116
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. Reacts with air to form peroxides.

Possibility of hazardous reactions

May form explosive peroxides.

Conditions to Avoid

Exposure to air or moisture over prolonged periods. Do not allow evaporation to dryness.

Materials to Avoid

Bases. Strong oxidizing agents. Metals.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating gases and vapors. Carbon oxides. Nitrogen oxides (NOx). Aldehydes.

11. TOXICOLOGICAL INFORMATION

Acute toxicity Product Information.

Skin contact	Causes burns. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
Eye contact	Causes burns. Corrosive to the eyes and may cause severe damage including blindness.
Inhalation	May cause sensitization by inhalation. Irritating to mucous membranes. Irritating to respiratory system.
Ingestion	Harmful if swallowed. Ingestion causes burns of the upper digestive and respiratory tracts.
Acute toxicity	1.2% of the mixture consists of ingredient(s) of unknown toxicity
Oral	452.00 mg/kg
Dermal	2,953.00 mg/kg

Acute toxicity - Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	90,000 mg/kg (Rat)		
Glutaraldehyde	200 mg/kg (Rat) (50% glutaraldehyde in water)	1749 mg/kg (Rat) (50% glutaraldehyde in water)	0.51 mg/L (4hr Rat)
Acetic acid	3310 mg/kg (Rat)	1060 mg/kg (Rabbit)	11.4 mg/L (Rat) 4 h
1H-Indazole, 5-nitro-	3200 mg/kg (Rat)	> 1000 mg/kg (guinea pig)	
Chemical Name	Other applicable information		

Acetic acid	Severe eye irritation Severe skin irritation Acute overexposure to extremely high airborne concentrations of respiratory irritants has been associated with development of an asthma-like reactive airways syndrome (RADS) in susceptible individuals. Extremely high airborne concentrations are not generated during normal conditions of use but may occur following a spill. The potential to generate extremely high airborne concentrations in a spill situation depends upon physical factors such as the concentration of the solution, the volume of the spill, the surface area of the spill, the size of the room where the spill occurred, and the ventilation rate in the room.
1H-Indazole, 5-nitro-	Mild skin irritation Repeated exposure Did not cause sensitization on laboratory animals. Mild eye irritation

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

Subchronic toxicity
no data available

Chronic toxicity
Chronic toxicity

Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risks of irreversible effects.

Sensitization

May cause sensitization by skin contact.

Neurological effects

No information available.

Target Organ Effects

Respiratory system, Eyes, Skin, Teeth, Mucous membrane, Gastrointestinal tract (GI).

Other adverse effects

Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen.

CMR Effects

Carcinogenicity

Contains no ingredient listed as a carcinogen.

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
Glutaraldehyde	0.61 mg/L EC50 72 h (Desmodesmus subspicatus) 0.84 mg/L EC50 96 h (Desmodesmus subspicatus)	LC50 7.8 - 22 mg/L Lepomis macrochirus 96 h LC50 2.6 - 4.8 mg/L Oncorhynchus mykiss 96 h LC50 7.8 - 13 mg/L Oncorhynchus mykiss 96 h LC50= 5.4 mg/L Pimephales promelas 96 h	EC50 = 14 mg/L 48 h (Daphnia magna) EC50 0.56 - 1.0 mg/L 48 h (Daphnia magna)

Acetic acid		LC50= 79 mg/L Pimephales promelas 96 h LC50= 75 mg/L Lepomis macrochirus 96 h	EC50 = 47 mg/L 24 h (Daphnia magna) EC50 = 65 mg/L 48 h (Daphnia magna)
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Persistence and degradability

Readily biodegradable.

Degradation						
Type:	Method	Compartment	Sampling time	Units	Result	Units
Chemical Oxygen Demand (COD)					535	g/l
Biochemical Oxygen Demand (BOD)					146	g/l

Bioaccumulative potential

No information available

Chemical Name	log Pow
Glutaraldehyde	0.22
Acetic acid	-0.31

Mobility in soil

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

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	UN3265
Proper Shipping Name	Corrosive liquid, acidic, organic, n.o.s.
Technical Name	Glutaraldehyde, Acetic acid
Hazard class	8
Packing Group	III
Classification Code	C3
ADR/RID-Labels	8
Special Provisions	274
ADR Hazard Id (Kemmler Number)	80
Hazchem Code	2X
Limited Quantity	LQ7

IMDG/IMO

UN/ID No	UN3265
Proper Shipping Name	Corrosive liquid, acidic, organic, n.o.s.
Technical Name	Glutaraldehyde, Acetic acid
Hazard class	8
Packing Group	III
Marine Pollutant	NP
Marine pollutant	Glutaraldehyde
EmS No.	F-A, S-B
Special Provisions	223, 274
Limited quantity DFDA	5 L

ICAO/IATA

UN/ID No	UN3265
Proper Shipping Name	Corrosive liquid, acidic, organic, n.o.s.
Technical Name	Glutaraldehyde, Acetic acid
Hazard class	8
Packing Group	III
ERG Code	8L
Special Provisions	A3
Limited quantity DFDA	1 L

ADN

UN/ID No	UN3265
Proper Shipping Name	Corrosive liquid, acidic, organic, n.o.s.
Technical Name	Glutaraldehyde, Acetic acid
Hazard class	8
Packing Group	III
Classification Code	C3
Special Provisions	274
Limited quantity DFDA	LQ7

TDG

UN/ID No	UN3265
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Proper Shipping Name Corrosive liquid, acidic, organic, n.o.s.
Technical Name Glutaraldehyde, Acetic acid
Hazard class 8
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
Glutaraldehyde	97-1-5 *	not applicable	>=1.0 %
Acetic acid	not applicable	not applicable	>=1.0 %

16. OTHER INFORMATION

Revision Date 2013-10-02
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