Material Safety Data Sheet

1. Identification of the substance/preparation and of the company/undertaking

Product name: KODAK RP X-OMAT Developer Replenisher, Part C

Product code: 1620509, Part C

Supplier: Carestream Health Canada Company, 6 Monogram Place, Suite 200, Toronto, Ontario, M9R 0A1

MSDS Prepared by: Health, Safety and Environment, Carestream Health, Inc., Rochester, New York, 14608.

For Emergency Health Information call: 1-800-424-9300.

For Other Information, call the Marketing and Distribution Center in Your Area.

Synonyms: None.

Product Use: photographic processing chemical, For industrial use only.

2. Hazards identification

CONTAINS: Glutaraldehyde (111-30-8), Acetic acid (64-19-7), 5-nitroindazole (5401-94-5)

DANGER!
POTENTIAL PEROXIDE FORMER
HARMFUL IF SWALLOWED
CAUSES SKIN AND EYE BURNS
DUST, MIST OR VAPOUR EXTREMELY IRRITATING TO THE EYES AND RESPIRATORY TRACT
MAY CAUSE ALLERGIC SKIN REACTION

HMIS III Hazard Ratings: Health - 3, Flammability - 1, Physical Hazard - 1

NFPA Hazard Ratings: Health - 3, Flammability - 1, Instability - 1

NOTE: HMIS III and NFPA hazard indexes involve data review and interpretation that may vary among companies. They are intended only for rapid, general identification of the magnitude of the potential hazards. An asterisk (*), in the HMIS III health field, designates potential chronic or target organ hazards. To adequately address safe handling, ALL information in this MSDS must be considered.

3. Composition/information on ingredients

Weight %	Components (CAS-No.)
40 - 45	Glutaraldehyde (111-30-8)
10 - 15	Acetic acid (64-19-7)

1 - 5 5-nitroindazole (5401-94-5)

4. First aid measures

Inhalation: If inhaled, remove to fresh air. Get medical attention.

Eyes: Immediately flush the contaminated eye(s) with water for at least 60 minutes, while holding the eyelid(s) open. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Neutral saline solution may be used as soon as it is available. DO NOT INTERRUPT FLUSHING. Contact a physician or poison control center immediately. Continue flushing the eye(s) until the physician advises to stop. If necessary, continue flushing during transport to an emergency care facility. If easy to do, remove contact lens, if worn.

Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes.

Ingestion: If swallowed, DO NOT induce vomiting. Call a physician or poison control centre immediately. Never give anything by mouth to an unconscious person.

5. Fire-fighting measures

Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Use water spray to cool unopened containers.

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Fight fire from a protected location.

Hazardous Combustion Products: Carbon oxides

Unusual Fire and Explosion Hazards: May form peroxides of unknown stability. May cause spontaneous heating and ignition when absorbed on porous materials (e.g., earth, rags, paper, sawdust, cotton, clothing).

6. Accidental release measures

Methods for cleaning up: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Collect in a noncombustible container for prompt disposal.

7. Handling and storage

Personal precautions: Do not breathe mist or vapour at concentrations greater than the exposure limits. Keep container tightly closed. Use only with adequate ventilation. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Do no eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace.

Prevention of Fire and Explosion: Keep away from heat and flame. Exercise caution if heating, especially in a closed container. 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. Remove and wash contaminated clothing promptly.

Storage: Store in cool place. Do not freeze. Keep away from incompatible substances (see Incompatibility section.) Protect against light. Keep container tightly closed.

8. Exposure controls/personal protection

Occupational exposure controls

Chemical Name	Regulatory List	Value Type	Value
Glutaraldehyde	ACGIH	Ceiling Limit Value:	0.05 ppm
	OSHA Z1A	Ceiling Limit Value:	0.2 ppm 0.8 mg/m3
Acetic acid	ACGIH	time weighted average	10 ppm
	ACGIH	Short term exposure limit	15 ppm
	OSHA Z1	time weighted average	10 ppm 25 mg/m3
	OSHA Z1A	time weighted average	10 ppm 25 mg/m3

Ventilation: Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. Controls should be sufficient so that applicable occupational exposure limits are not exceeded.

Respiratory protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. Respirator type: full-face organic vapour cartridge. If respirators are used, a program should be instituted to assure compliance with applicable federal, state, commonwealth, provincial, or local laws and regulations.

Eye protection: If a full-face respirator is not worn, wear vapour-tight chemical goggle and a face shield.

Skin and body protection: Wear impervious gloves and protective clothing appropriate for the risk of exposure.

Recommended Decontamination Facilities: Safety shower, eye wash, washing facilities as appropriate to condition of use.

9. Physical and Chemical Properties

Physical form: liquid

Colour: yellow-green

Odour: aldehyde

Specific gravity: 1.116

Vapour pressure (at 20.0 °C (68.0 °F)) : 24 mbar (18.0 mm Hg)

Vapour density: 1.8

Volatile fraction by weight: 40 - 45 %

Boiling point/boiling range: > 100.0 °C (> 212.0 °F)

Water solubility: complete

pH: 2.3

Flash point: does not flash

10. Stability and reactivity

Stability: Normally stable; however, on long term storage, materials containing similar functional groups form peroxides of unknown stability.

Incompatibility: Strong oxidizing agents, Metals.

Hazardous decomposition products: None under normal conditions of use.

Hazardous Polymerization: Nonhazardous polymerization may occur. Avoid initiators, accelerators, heat, pressure, contamination. incompatible materials

11. Toxicological information

Effects of Exposure

General advice:

Contains: Acetic acid. 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 occured, and the ventilation rate in the room.

Inhalation: Airborne dust/mist/vapor extremely irritating. Although it is known that glutaraldehyde is a respiratory tract irritant and may aggravate pre-existing asthmatic disorders, the supporting data for respiratory sensitization are less conclusive.

Eyes: Causes eye burns. Airborne dust/mist/vapor extremely irritating.

Skin: Causes skin burns. May cause allergic skin reaction based on human experience.

Ingestion: Harmful if swallowed. May cause burns of the gastrointestinal tract if swallowed.

Data for Glutaraldehyde (CAS 111-30-8):

Acute Toxicity Data:

- Oral LD50 (rat): 66 mg/kg
- Inhalation LC50 (rat): 0.1 mg/l / 4 hr

- Dermal LD50 (rat): > 2,000 mg/kg

Data for Acetic acid (CAS 64-19-7):

Acute Toxicity Data:

- Oral LD50 (rat): 3,310 - 3,530 mg/kg
- Oral LD50: 4,960 mg/kg
- Inhalation LC50: 16000 ppm / 4 hr
- Dermal LD50: 1,060 mg/kg
- Skin irritation: severe
- Eye irritation: severe

Data for 5-nitroindazole (CAS 5401-94-5):

Acute Toxicity Data:

- Oral LD50 (rat): 3,200 mg/kg
- Dermal LD50: > 1,000 mg/kg
- Skin irritation: slight
- Skin irritation: slight (repeated skin application)
- Skin Sensitization: negative
- Eye irritation: slight

Mutagenicity/Genotoxicity Data:

- Mouse lymphoma assay: negative (in presence and absence of activation)
- Salmonella/Mammalian-Microsome Reverse Mutation Screening Assay (TA98, TA100): positive (in presence and absence of activation)

Definitions for the following section(s): LOEL =lowest-observed-effect level, LOAEL = lowest-observed-adverse-effect, NOAEL = no observed-adverse-effect level, NOEL =no-observed-effect level.

Repeated dose toxicity:

- Oral (12-day, rat): NOAEL; 81 mg/kg/day

12. Ecological information

The following properties are ESTIMATED from the components of the preparations.

Potential Toxicity:

Toxicity to fish (LC50):	10 - 100 mg/l
Toxicity to daphnia (EC50):	10 - 100 mg/l
Toxicity to algae (IC50):	1 - 10 mg/l
Toxicity to other organisms (EC50):	10 - 100 mg/l

Persistence and degradability: Readily biodegradable.

Chemical Oxygen Demand (COD): 535 g/l

Biochemical Oxygen Demand (BOD): 146 g/l

13. Disposal considerations

Discharge, treatment, or disposal may be subject to federal, state, commonwealth, provincial, or local laws. Since emptied containers retain product residue, follow label warnings even after container is emptied.

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.

IATA:	UN Number:	UN3265
	Proper shipping name:	Corrosive liquid, acidic, organic, n.o.s. (Glutaraldehyde, Acetic acid)
	Class:	8
	Packaging group:	III
IMDG:	UN Number:	UN3265
	Proper shipping name:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Glutaraldehyde, Acetic acid)
	Class:	8
	Packaging group:	III
TDG:	UN Number:	UN3265
	Proper shipping name:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Glutaraldehyde, Acetic acid)
	Class:	8
	Packaging group:	III
US DOT:	UN Number:	UN3265
	Proper shipping name:	Corrosive liquid, acidic, organic, n.o.s. (Glutaraldehyde, Acetic acid)
	Class:	8
	Packaging group:	III

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

15. Regulatory information

Notification status

Regulatory List	Notification status	Other information	Not listed

EINECS	y (positive listing)	-
TSCA	y (positive listing)	On TSCA Inventory
AICS	y (positive listing)	-
DSL	y (positive listing)	All components of this product are on the Canadian DSL list.
ENCS (JP)	y (positive listing)	-
KECI (KR)	y (positive listing)	-
PICCS (PH)	y (positive listing)	-
INV (CN)	y (positive listing)	-

A N (Negative listing) indicates one or more component is either not on the public Inventory or is subject to exemption requirements. If additional information is needed contact Carestream Health.

WHMIS (Canada): E, D1B

WHMIS Symbol(s):

Other regulations

American Conference of Governmental Industrial Hygienists (ACGIH):	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
International Agency for Research on Cancer (IARC):	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
U.S. National Toxicology Program (NTP):	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
U.S. Occupational Safety and Health Administration (OSHA):	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
California Prop. 65:	This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:	SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323):	Water, Glutaraldehyde, Acetic acid
US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000):	Glutaraldehyde, Acetic acid
US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5):	Water, Glutaraldehyde, Acetic acid, 5-nitroindazole

16. Other information

The data below reflects current legislative requirements whereas the product in your possession may carry a different version of the label depending on the date of manufacture.

US/Canadian Label Statements:

CONTAINS: Glutaraldehyde (111-30-8), Acetic acid (64-19-7), 5-nitroindazole (5401-94-5)

DANGER!
POTENTIAL PEROXIDE FORMER
HARMFUL IF SWALLOWED
CAUSES SKIN AND EYE BURNS
DUST, MIST OR VAPOUR EXTREMELY IRRITATING TO THE EYES AND RESPIRATORY TRACT
MAY CAUSE ALLERGIC SKIN REACTION

Store in a cool place.
Do not freeze.
Avoid heat or contamination.
Store away from heat and light.
Do not allow to evaporate to near dryness.
Do not breathe vapours or spray mist.
Keep container tightly closed.
Use only with adequate ventilation.
Do not get in eyes, on skin, or on clothing.
Wash thoroughly after handling.
Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly.

FIRST AID: If inhaled, remove to fresh air. Get medical attention. Immediately flush the contaminated eye(s) with water for at least 60 minutes, while holding the eyelid(s) open. If a

contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Neutral saline solution may be used as soon as it is available. DO NOT INTERRUPT FLUSHING. Contact a physician or poison control center immediately. Continue flushing the eye(s) until the physician advises to stop. If necessary, continue flushing during transport to an emergency care facility. If easy to do, remove contact lens, if worn. In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes. If swallowed, DO NOT induce vomiting. Call a physician or poison control centre immediately. Never give anything by mouth to an unconscious person.

Keep out of reach of children.

Do not handle or use until safety precautions in Material Safety Data Sheet (MSDS) have been read and understood.

Since emptied containers retain product residue, follow label warnings even after container is emptied.

IN CASE OF FIRE: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Use water spray to cool unopened containers.

IN CASE OF SPILL: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Collect in a noncombustible container for prompt disposal.
