Carestream

MATERIAL SAFETY DATA SHEET

Issuing date 2013-09-10 **Revision Date** 2013-09-10 **Version** 2

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

Product name: X-OMAT EX II Developer and Replenisher, Part A
KODAK X-OMAT EX II Developer and Replenisher, Part A

Product code: 1135433A

Supplier Carestream Health Canada, 8800 Dufferin Street, Suite 201, Vaughan, Ontario, L4K 0C5

For Emergency Health Information call: 800-424-9300

For other information contact: 1-866-792-5011

Synonyms PCD 6400
Product Use: Photographic chemical.

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

Harmful if swallowed
Causes eye irritation.
May cause central nervous system depression
May cause adverse kidney effects

Physical state liquid **Odor** Odorless **Color** light yellow

HMIS **Health Hazard** - 3 **Flammability** - 1 **Physical Hazard** - 0

Potential Health Effects

Eyes	Risk of serious damage to eyes. May cause eye irritation with susceptible persons. Causes burns. Corrosive to the eyes and may cause severe damage including blindness.
Skin	Repeated exposure may cause skin dryness or cracking. Non-irritating during normal use. May be harmful in contact with skin. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Causes burns.
Inhalation	No hazard from product as supplied. May cause irritation of respiratory tract. Contact with strong acids liberates sulfur dioxide. May be harmful if inhaled. May cause allergic respiratory reaction. Harmful by inhalation.
Ingestion	Harmful if swallowed. May cause adverse kidney effects. May cause central nervous system effects. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea. May be harmful if swallowed. May cause additional effects as listed under "Inhalation". Ingestion causes burns of the upper digestive and respiratory tracts. Can burn mouth, throat, and stomach.

Chronic Effects

Chronic toxicity	Avoid repeated exposure. Prolonged exposure may cause chronic effects.

Aggravated Medical Conditions	Central nervous system. Preexisting eye disorders. Skin disorders. Allergies. Kidney disorders. Liver disorders.
Environmental hazard	See Section 12 for additional Ecological Information. Very toxic to aquatic organisms.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous

Chemical Name	CAS-No	Weight %
Potassium sulfite	10117-38-1	10-20
Hydroquinone	123-31-9	5-10
Diethylene glycol	111-46-6	1-5
Potassium hydroxide	1310-58-3	1-5
Sodium carbonate	497-19-8	1-5
3-Pyrazolidinone, 4-(hydroxymethyl)-4-methyl-1-phenyl-	13047-13-7	0.1-1

Non-Hazardous

Chemical Name	CAS-No	Weight %
Water	7732-18-5	60-70

4. FIRST AID MEASURES

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

Eye contact 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.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Remove and wash contaminated clothing before re-use. Get medical attention immediately if symptoms occur.

Inhalation Move to fresh air in case of accidental inhalation of vapors. Get medical attention immediately if symptoms occur.

Ingestion If swallowed, call a poison control center or doctor immediately. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water.

Notes to physician Treat symptomatically.

Protection of First-aiders Use personal protective equipment. Avoid contact with skin, eyes and clothing.

5. FIRE-FIGHTING MEASURES

Flammable Properties Containers may explode when heated.

Flash point: > 93.3 °C > 200 °F

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Do not scatter spilled material with high pressure water streams.

Hazardous Combustion Products Carbon oxides, Sulfur oxides.

Specific hazards arising from the chemical
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA	**Health Hazard** - 3	**Flammability** - 1	**Stability** - 0

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. For personal protection see section 8.

Methods for Containment Dike far ahead of liquid spill for later disposal.

Methods for cleaning up 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).

Other information Refer to protective measures listed in Sections 7 and 8.

7. HANDLING AND STORAGE

Advice on safe handling Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling.

Technical measures/Storage conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep out of the reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	AIHA - Workplace Environmental Exposure Levels (WEELs) - TWAs	OSHA PEL	Advisory OEL
Hydroquinone 123-31-9	TWA: 1 mg/m^3		TWA: 2 mg/m^3	
Diethylene glycol 111-46-6		TWA: 10 mg/m^3		
Potassium hydroxide 1310-58-3	Ceiling: 2 mg/m^3			

Occupational Exposure Controls

Engineering Measures Showers
Eyewash stations
Ventilation systems.

Personal Protective Equipment

General Information These recommendations apply to the product as supplied.

Respiratory protection Use only with adequate ventilation. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

Eye/Face Protection	Tightly fitting safety goggles. Face-shield.
Skin and body protection	Wear suitable protective clothing.
Hand Protection	Impervious gloves.
Other Protective Equipment	Ensure that eyewash stations and safety showers are close to the workstation location.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state liquid
ph 11
Flash point: > 93.3 °C
Boiling point/boiling range 100 °C / 212 °F

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 No information available
Bulk Density: No information available /

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Incompatible products	Incompatible with strong acids and bases. Incompatible with oxidizing agents.
Conditions to Avoid	None known.
Hazardous Decomposition Products	Sulfur oxides.
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	Contact with strong acids liberates sulfur dioxide.

11. TOXICOLOGICAL INFORMATION

Acute toxicity - Product Information

Skin	Repeated exposure may cause skin dryness or cracking. Non-irritating during normal use. May be harmful in contact with skin. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Causes burns.
Eyes	Risk of serious damage to eyes. May cause eye irritation with susceptible persons. Causes burns. Corrosive to the eyes and may cause severe damage including blindness.
Inhalation	No hazard from product as supplied. May cause irritation of respiratory tract. Contact with strong acids liberates sulfur dioxide. May be harmful if inhaled. May cause allergic respiratory reaction. Harmful by inhalation.

Ingestion

Harmful if swallowed. May cause adverse kidney effects. May cause central nervous system effects. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea. May be harmful if swallowed. May cause additional effects as listed under "Inhalation". Ingestion causes burns of the upper digestive and respiratory tracts. Can burn mouth, throat, and stomach.

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)	
Potassium hydroxide	214 mg/kg (Rat)		
Sodium carbonate	4090 mg/kg (Rat)		
3-Pyrazolidinone, 4-(hydroxymethyl)-4-methyl-1-phenyl-	566 mg/kg (Rat)		

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.
Potassium hydroxide	Severe skin irritation Causes eye burns
Sodium carbonate	Mild skin irritation
3-Pyrazolidinone, 4-(hydroxymethyl)-4-methyl-1-phenyl-	Mild skin irritation Skin Sensitization Slight Eye Irritation Strong Based on repeated-dose ingestion studies in animals, this chemical may cause blood, testicular, and adverse reproductive effects.

Subchronic toxicity

No information available

Chronic toxicity Avoid repeated exposure. Prolonged exposure may cause chronic effects.

Carcinogenicity

- EU Carc.Cat.3. R40 - Limited evidence of a carcinogenic effect.

Chemical Name	ACGIH	IARC	NTP	OSHA
Hydroquinone	A3			

ACGIH: (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen
OSHA: (Occupational Safety & Health Administration)
X - Present

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.

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.

Target Organ Effects Respiratory system, Central nervous system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects Very toxic to aquatic organisms.

Component Information

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Potassium sulfite		LC50 220 - 460 mg/L Leuciscus idus 96 h	
Hydroquinone	13.5 mg/L EC50 120 h (Desmodesmus subspicatus) 0.335 mg/L EC50 72 h (Pseudokirchneriella subcapitata)	LC50= 0.044 mg/L Oncorhynchus mykiss 96 h LC50= 0.044 mg/L Pimephales promelas 96 h LC50 0.1 - 0.18 mg/L Pimephales promelas 96 h LC50= 0.17 mg/L Brachydanio rerio 96 h	EC50 = 0.29 mg/L 48 h (Daphnia magna)
Diethylene glycol		LC50= 75200 mg/L Pimephales promelas 96 h	EC50 = 84000 mg/L 48 h (Daphnia magna)
Potassium hydroxide		LC50= 80 mg/L Gambusia affinis 96 h	
Sodium carbonate	242 mg/L EC50 120 h (Nitzschia)	LC50= 300 mg/L Lepomis macrochirus 96 h LC50 310 - 1220 mg/L Pimephales promelas 96 h	EC50 = 265 mg/L 48 h (Daphnia magna)

Persistence and degradability No data is available on the product itself. Expected to be readily biodegradable.

Bioaccumulation: - No information available

Mobility - No information available

Chemical Name	log Pow
Hydroquinone	0.5
Diethylene glycol	-1.98
Potassium hydroxide	0.65 0.83

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	Should not be released into the environment.
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.

DOT Not regulated

TDG

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

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

IMDG/IMO

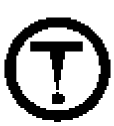
UN/ID No	UN3082
Proper Shipping Name	Environmentally hazardous substance, liquid, n.o.s.
Technical Name	Hydroquinone
Hazard class	9
Packing Group	III
EmS No.	F-A, S-F
Special Provisions	274, 335

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

15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
D2B Toxic materials



International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

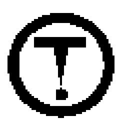
Legend

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

Disclaimer for Label

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.



DANGER!

- Contains:

Hazardous Components

Chemical Name	CAS-No	Weight %
Potassium sulfite	10117-38-1	10-20
Hydroquinone	123-31-9	5-10
Diethylene glycol	111-46-6	1-5
Potassium hydroxide	1310-58-3	1-5
Sodium carbonate	497-19-8	1-5
3-Pyrazolidinone, 4-(hydroxymethyl)-4-methyl-1-phenyl-	13047-13-7	0.1-1

Harmful if swallowed. Causes eye irritation. May cause central nervous system depression. May cause adverse kidney effects.

Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Ensure adequate ventilation. Wash thoroughly after handling.

Additional information is given in the Material Safety Data Sheet.