MATERIAL SAFETY DATA SHEET

Issuing date 2013-11-12 **Revision Date** 2013-11-12 **Version** 5

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

Product name: Rapid Access Developer
KODAK Rapid Access Dental Developer

Product code: 1838374DEV

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

Product Use: Photographic chemical. Restricted to professional users.

2. HAZARDS IDENTIFICATION

Warning!

Emergency Overview

Causes eye irritation.
Risk of serious damage to eyes
May cause burns of eyes, skin and mucous membranes
May be harmful if swallowed

Physical state liquid **Odor** Slight **Color** clear light yellow

HMIS **Health Hazard** - 2* **Flammability** - 1 **Physical Hazard** - 0

Potential Health Effects

Eyes	Irritating to eyes. Expected to be severely irritating or corrosive based on components present in formulation and the pH of the overall product.
Skin	Expected to be severely irritating or corrosive based on components present in formulation and the pH of the overall product. Prolonged or repeated contact may dry skin and cause irritation.
Inhalation	Inhalation of mist is expected to cause respiratory irritation. Contact with strong acids liberates sulfur dioxide.
Ingestion	May be harmful if swallowed. 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.

Chronic Effects

Chronic toxicity	Effects expected to be similar to those seen acutely.
Aggravated Medical Conditions	Preexisting eye disorders. Skin disorders. Respiratory disorders.
Environmental hazard	See Section 12 for additional Ecological Information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous

Chemical Name	CAS-No	Weight %
Potassium sulfite	10117-38-1	5-10
Hydroquinone	123-31-9	5-10
Sodium borate	1330-43-4	0.1-1
Potassium hydroxide	1310-58-3	<0.1

Non-Hazardous

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

4. FIRST AID MEASURES

General advice IN CASE OF SERIOUS OR PERSISTENT CONDITIONS, CALL A DOCTOR OR EMERGENCY MEDICAL CARE.

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

Skin contact Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. Get medical attention immediately if symptoms occur.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

Ingestion If swallowed, call a poison control center or doctor immediately. Do not induce vomiting without medical advice. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person.

Notes to physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash point: Does not flash

Suitable Extinguishing Media Use CO2, dry chemical, or foam.

Unsuitable Extinguishing Media Do not use a solid water stream as it may scatter and spread fire.

Hazardous Combustion Products Hazardous decomposition products due to incomplete combustion.

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** - 2 **Flammability** - 1 **Stability** - 0

6. ACCIDENTAL RELEASE MEASURES

Personal precautions For personal protection see section 8. Ensure adequate ventilation.

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Other information See Section 12 for additional information.

7. HANDLING AND STORAGE

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

Technical measures/Storage conditions Keep container tightly closed in a dry and well-ventilated place.

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/m³		TWA: 2 mg/m³	
Sodium borate 1330-43-4	STEL 6 mg/m³ TWA: 2 mg/m³			
Potassium hydroxide 1310-58-3	Ceiling: 2 mg/m³			

Occupational Exposure Controls

Engineering Measures Ensure adequate ventilation. Apply technical measures to comply with the occupational exposure limits.

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

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 12.2
Flash point: Does not flash
Boiling point/boiling range > 100 °C

Vapor Pressure 24 mbar @ 20 °C
Vapor density 0.6

Odor Slight
Color clear light yellow
Autoignition temperature: No information available

Density No information available
Water Solubility completely soluble
Melting point/range: No information available
Specific Gravity 1.12
Bulk Density: No information available

10. STABILITY AND REACTIVITY

Stability Stable under normal conditions.

Incompatible products Oxidizing agents. Strong acids.

Conditions to Avoid Heat, flames and sparks.

Hazardous Decomposition Products Carbon oxides, 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 Expected to be severely irritating or corrosive based on components present in formulation and the pH of the overall product. Prolonged or repeated contact may dry skin and cause irritation.

Eyes Irritating to eyes. Expected to be severely irritating or corrosive based on components present in formulation and the pH of the overall product.

Inhalation Inhalation of mist is expected to cause respiratory irritation. Contact with strong acids liberates sulfur dioxide.

Ingestion May be harmful if swallowed. 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.

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)	
Sodium borate	2403 mg/kg (Rat)	2000 mg/kg (Rabbit)	
Potassium hydroxide	214 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.
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 Causes eye burns

Subchronic toxicity No information available

Chronic toxicity Effects expected to be similar to those seen acutely.

Carcinogenicity Contains a known or suspected carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Hydroquinone	A3			

ACGIH: (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen

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.

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. However, based on available data the product should not be classified for reproductive effects.

Target Organ Effects Skin, Eyes, Respiratory 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 0.1 - 0.18 mg/L Pimephales promelas 96 h LC50= 0.044 mg/L Pimephales promelas 96 h LC50= 0.17 mg/L Brachydanio rerio 96 h LC50= 0.044 mg/L Oncorhynchus mykiss 96 h	EC50 = 0.29 mg/L 48 h (Daphnia magna)
Sodium borate	158 mg/L EC50 96 h (Desmodesmus subspicatus) 2.6 - 21.8 mg/L EC50 96 h (Pseudokirchneriella subcapitata)	LC50= 340 mg/L Limanda limanda 96 h	LC50 1085 - 1402 mg/L 48 h (Daphnia magna)
Potassium hydroxide		LC50= 80 mg/L Gambusia affinis 96 h	

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
Potassium hydroxide	0.65 0.83

Other adverse effects
No information available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods 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.

DOT

UN/ID No	UN3266
Proper Shipping Name	Corrosive liquid, basic, inorganic, n.o.s.
Technical Name	Hydroquinone, Potassium hydroxide
Hazard class	8
Packing Group	III
Special Provisions	IB3, T7, TP1, TP28
Emergency Response Guide Number	154

TDG

UN/ID No	UN3266
Proper Shipping Name	Corrosive liquid, basic, inorganic, n.o.s.

Technical Name	Hydroquinone, Potassium hydroxide
Hazard class	8
Packing Group	III

ICAO/IATA

UN/ID No	UN3266
Proper Shipping Name	Corrosive liquid, basic, inorganic, n.o.s.
Technical Name	Hydroquinone, Potassium hydroxide
Hazard class	8
Packing Group	III
ERG Code	8L
Special Provisions	A3, A803

IMDG/IMO

UN/ID No	UN3266
Proper Shipping Name	Corrosive liquid, basic, inorganic, n.o.s.
Technical Name	Hydroquinone, Potassium hydroxide
Hazard class	8
Packing Group	III
EmS No.	F-A, S-B
Special Provisions	223, 274
Marine pollutant	Hydroquinone

This corrosive material, as per 49 CFR §173.154 and when the product meets the packaging requirements of 49 CFR §173.154 (b)(2) [inner packagings not over 5.0 L (1.3 gallons) net capacity each for liquid] is excepted from labeling and placarding requirements so long as the material is not offered for transport by aircraft.

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
E Corrosive material

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.

Warning!

- Contains:

Hazardous Components

Chemical Name	CAS-No	Weight %
Potassium sulfite	10117-38-1	5-10
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Sodium borate	1330-43-4	0.1-1
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Causes eye irritation. Risk of serious damage to eyes. May cause burns of eyes, skin and mucous membranes. May be harmful if swallowed.

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

IF IN EYES: Flush eyes for at least 15 minutes. Get medical attention.
If swallowed, call a poison control center or doctor immediately. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.
Additional information is given in the Material Safety Data Sheet.