Carestream

MATERIAL SAFETY DATA SHEET.

Issuing date 2011-09-21 **Revision Date** 2011-09-21 **Version** 2

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

Product name: KODAK INDUSTREX Single Part Developer Replenisher.

Product code: 1043017

Supplier Carestream Health, Inc., 150 Verona Street, Rochester, New York 14608.

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

For other information contact: 800-328-2910.

Product Use: Photographic chemical.

2. HAZARDS IDENTIFICATION

Warning!.

Emergency Overview

Causes eye irritation
Harmful if swallowed

Physical state liquid. **Odor** Odorless. **Color** colorless - light yellow.

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

Potential Health Effects

Eyes	Irritating to eyes.
Skin	May cause skin irritation and/or dermatitis. Prolonged or repeated contact may dry skin and cause irritation.
Inhalation	No hazard from product as supplied. May cause irritation of respiratory tract. Contact with strong acids liberates sulfur dioxide.
Ingestion	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	10-20
Hydroquinone	123-31-9	5-10
Potassium carbonate	584-08-7	1-5
Sodium bromide	7647-15-6	1-5
Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]-, pentasodium salt	140-01-2	1-5
3-Pyrazolidinone, 4-(hydroxymethyl)-4-methyl-1-phenyl-	13047-13-7	0.1-1.0

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 Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately if symptoms occur.

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: . >. 93.4 °C.

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	

Occupational Exposure Controls

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

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 . 10.7
Flash point: . >. 93.4 °C.
Boiling point/boiling range . 100 °C.

Odor Odorless.
Color colorless - light yellow.
Autoignition temperature: No information available.

Vapor Pressure . 24 mbar @ 20 °C.
Vapor density . 0.6
Density No information available.
Volatile organic compounds (VOC) content 65 - 70
Water Solubility . completely soluble.
Melting point/range: No information available.
Specific Gravity . 1.26
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 May cause skin irritation and/or dermatitis. Prolonged or repeated contact may dry skin and cause irritation.

Eyes Irritating to eyes.

Inhalation No hazard from product as supplied. May cause irritation of respiratory tract. Contact with strong acids liberates sulfur dioxide.

Ingestion 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 mL/kg (Rat)		
Hydroquinone	320 mg/kg (Rat)	> 4800 mg/kg (Rat)	
Potassium carbonate	1870 mg/kg (Rat)	>2000 mg/kg (Rabbit)	
Sodium bromide	3400 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	
3-Pyrazolidinone, 4-(hydroxymethyl)-4-methyl-1-phenyl-	566 mg/kg (Rat)		

Chemical Name	Other applicable information

Potassium sulfite	Mild skin irritation - 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 bromide	Ingestion of bromide salts can cause nausea, vomiting, headache, irritability, delirium, memory loss, decreased appetite, joint pain, hallucinations, stupor, coma, and acne like rash on face, legs, and trunk.
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 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, Reproductive system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects Harmful 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)
Sodium bromide	5800 - 24000 mg/L EC50 96 h (Scenedesmus pannonicus)	LC50 24000 - 96000 mg/L Oryzias latipes 96 h LC50= 24000 mg/L Oryzias latipes 96 h LC50 16000 - 24000 mg/L Poecilia reticulata 96 h LC50= 16000 mg/L Poecilia reticulata 96 h LC50 15614 - 17428 mg/L Pimephales promelas 96 h LC50> 1000 mg/L Lepomis macrochirus 96 h LC50 0.054 - 0.081 mg/L Oncorhynchus mykiss 96 h LC50> 1000 mg/L Oncorhynchus mykiss 96 h	EC50 5800 - 48000 mg/L 48 h (Daphnia magna) EC50 5700 - 10800 mg/L 48 h (Daphnia magna)
Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]-, pentasodium salt	2.6 mg/L EC50 72 h (Desmodesmus subspicatus)	LC50> 300 mg/L Pimephales promelas 96 h LC50 1005 - 1250 mg/L Lepomis macrochirus 96 h	EC50 > 500 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

Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]-, pentasodium salt	-3.05

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods 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.

Proper Shipping Name Corrosive liquid, basic, inorganic, n.o.s.

DOT .
- **Description** UN3266 Corrosive liquid, basic, inorganic, n.o.s. (Potassium carbonate), 8, PG III, Limited Quantity .
- **Proper Shipping Name** Corrosive liquid, basic, inorganic, n.o.s.
- **Hazard class** 8
- **UN/ID No** UN3266
- **Packing Group** III

TDG .
- **Description** UN3266, Corrosive liquid, basic, inorganic, n.o.s (Potassium carbonate), 8, PG III, limited quantity.
- **UN/ID No** UN3266
- **Proper Shipping Name** Corrosive liquid, basic, inorganic, n.o.s.
- **Hazard class** 8
- **Packing Group** III
- **UN/ID No** UN3266

ICAO/IATA .
- **UN/ID No** UN3266
- **Proper Shipping Name** Corrosive liquid, basic, inorganic, n.o.s.
- **Hazard class** 8
- **Packing Group** III
- **ERG Code** 8L
- **Special Provisions** A3
- **Description** UN3266, Corrosive liquid, basic, inorganic, n.o.s (POTASSIUM CARBONATE), 8, PG III.

IMDG/IMO .
- **Hazard class** 8
- **UN/ID No** UN3266
- **Packing Group** III
- **EmS No.** F-A, S-B
- **Special Provisions** 223, 274
- **Proper Shipping Name** Corrosive liquid, basic, inorganic, n.o.s.

Description	UN3266, Corrosive liquid, basic, inorganic, n.o.s (Potassium carbonate), 8, PG III, Limited Quantity.

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

15. REGULATORY INFORMATION

"Does not comply" indicates a component is either not on the public inventory or is subject to exemption requirements. If additional information is needed contact Carestream Health.

International Inventories

TSCA	Complies
DSL/NDSL	Does not comply
EINECS/ELINCS	Does not comply
ENCS	Complies
IECSC	Does not comply
KECL	Does not comply
PICCS	Does not comply
AICS	Complies
NZIoC	Does not comply

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.

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Name	SARA 313 - Threshold Values %
Hydroquinone - 123-31-9	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes.
Chronic Health Hazard	Yes.
Fire Hazard	No.
Sudden Release of Pressure Hazard	No.
Reactive Hazard	No.

Clean Water Act
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
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Chemical Name	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Hydroquinone - 123-31-9		Group I		

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	SARA Product RQ
Hydroquinone	100 lb	100 lb	

TSCA
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Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(a) - Chemical-Specific Reporting and Recordkeeping
Water	Partially exempt chemical substance termed Petroleum Process Stream

Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(d) - 716.120(a) - Health and Safety Reporting - List of Substances
Hydroquinone	10/04/1984

U.S. State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations
.

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Hydroquinone	X	X	X	X	X

International Regulations

Mexico - Grade Moderate risk, Grade 2.

Chemical Name	Carcinogen Status	Exposure Limits
Hydroquinone	A3	Mexico: TWA 2 mg/m³

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	10-20

Hydroquinone	123-31-9	5-10
Potassium carbonate	584-08-7	1-5
Sodium bromide	7647-15-6	1-5
Glycine, N,N-bis[2-[bis(carboxymethyl)amino]ethyl]-, pentasodium salt	140-01-2	1-5
3-Pyrazolidinone, 4-(hydroxymethyl)-4-methyl-1-phenyl-	13047-13-7	0.1-1.0

Causes eye irritation. Harmful if swallowed.

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.