Material Safety Data Sheet

Kodak

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

Product name: KODAK T-MAX RS Developer and Replenisher, Part A

Product code: 5054184 - Part A

Supplier: EASTMAN KODAK COMPANY, 343 State Street, Rochester, New York 14650

For Emergency Health, Safety & Environmental Information, call (585) 722-5151 (USA)

For further information about this product, call (800) 242-2424.

Synonyms: PCD 5492

Product Use: photographic processing chemical (developer/activator), For industrial use only.

2. Hazards identification

CONTAINS: Diethanolamine (111-42-2), Sulphur dioxide (7446-09-5), Hydroquinone (123-31-9), Sodium bisulphite (7631-90-5), 4-hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidinone (13047-13-7)

WARNING!
HARMFUL IF INHALED, ABSORBED THROUGH SKIN, OR SWALLOWED
CAUSES SKIN AND EYE IRRITATION
MAY CAUSE ALLERGIC SKIN REACTION
CAN CAUSE LUNG DAMAGE
MAY CAUSE LIVER DAMAGE BASED ON ANIMAL DATA
MAY CAUSE KIDNEY DAMAGE BASED ON ANIMAL DATA
MAY CAUSE BLOOD DISORDERS BASED ON ANIMAL DATA

HMIS III Hazard Ratings: Health - 2*, Flammability - 1, Physical Hazard - 0

NFPA Hazard Ratings: Health - 3, Flammability - 1, Instability - 0

NOTE: HMIS III and NFPA 704 (2007) 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. To adequately address safe handling, ALL information in this MSDS must be considered.

3. Composition/information on ingredients

Weight percent	Components - (CAS-No.)
30 - 35	Diethanolamine (111-42-2)
15 - 20	Sulphur dioxide (7446-09-5)
1 - 5	Hydroquinone (123-31-9)
1 - 5	Sodium bisulphite (7631-90-5)
0.1 - < 1	4-hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidinone (13047-13-7)

4. First aid measures

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

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention. 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, only induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control centre immediately.

5. Fire-fighting measures

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

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Fire or excessive heat may produce hazardous decomposition products.

Hazardous Combustion Products: Carbon oxides, nitrogen oxides (NOx), Sulphur oxides, (see also Hazardous Decomposition Products sections.)

Unusual Fire and Explosion Hazards: None.

6. Accidental release measures

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination.

7. Handling and storage

Personal precautions: Do not breathe mist or vapour at concentrations greater than the exposure limits. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

Prevention of Fire and Explosion: Keep from contact with oxidizing materials.

Storage: Keep container tightly closed. Keep away from incompatible substances (see Incompatibility section.)

8. Exposure controls/personal protection

Occupational exposure controls

Chemical Name	Regulatory List	Value Type	Value
Diethanolamine	ACGIH	time weighted average	1 mg/m3
		Form of exposure: inhalable fraction and vapor	

		Skin - potential significant contribution to overall exposure by the cutaneous route	
Sulphur dioxide		Short term exposure limit	0.25 ppm
	OSHA	time weighted average	5 ppm 13 mg/m3
Hydroquinone	ACGIH	time weighted average	1 mg/m3
	OSHA	time weighted average	2 mg/m3
Sodium bisulphite	ACGIH	time weighted average	5 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: organic vapour. A respirator should be worn if hazardous decomposition products are likely to be or have been released. Respirator type: acid gas 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: Wear safety glasses with side shields (or goggles).

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

9. Physical and chemical properties

Physical form: liquid

Colour: tan

Odour: amine

Specific gravity: 1.21

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

Vapour density: 0.6

Boiling point/boiling range: > 100 °C (> 212.0 °F)

Water solubility: complete

pH: 8.9

Flash point: does not flash

10. Stability and reactivity

Stability: Stable under normal conditions.

Incompatibility: Strong oxidizing agents, Acids. Contact with strong acids liberates sulphur dioxide.

Hazardous decomposition products: Sulphur oxides, nitrogen oxides (NOx)

Hazardous Polymerization: Hazardous polymerisation does not occur.

11. Toxicological information

Effects of Exposure

General advice:

Contains: Diethanolamine. Based on animal data, may cause adverse effects on the following organs/systems: kidney, liver, blood, nervous system, testes.

Contains: Hydroquinone. There is insufficient evidence for classifying hydroquinone as a suspected carcinogenic or mutagenic substance in humans. No increases in cancer rates were observed in an epidemiology study which looked at mortality among more than 800 persons employed primarily in the manufacture of hydroquinone. Carcinogenicity studies in animals were inconclusive. Rats and mice were given hydroquinone by stomach tube or at high concentrations in the diet. Responses were not consistent across route of exposure, species or sex. The International Agency for Research on Cancer (IARC) has classified hydroquinone in Group 3, i.e., "not classifiable" as a carcinogen. Hydroquinone is generally negative in bacterial mutagenicity tests; there is evidence for the clastogenicity (chromosome breakage) of hydroquinone in vivo and in vitro. The relevance of chromosomal effects in test animals in predicting human risk is unclear.

Contains: 4-hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidinone. May cause adverse reproductive effects such as infertility based on animal data. Based on repeated-dose ingestion studies in animals, this chemical may cause blood, testicular, and adverse reproductive effects.

Inhalation: Harmful if inhaled. In contact with strong acids or if heated, sulphites may liberate sulphur dioxide gas. Sulphur dioxide gas is irritating to the respiratory tract. Some asthmatics or hypersensitive individuals may experience difficult breathing.

Eyes: Causes eye irritation.

Skin: Harmful if absorbed through skin. Causes skin irritation. May cause allergic skin reaction based on human experience. May cause skin depigmentation. Prolonged or repeated contact may cause drying, cracking, or irritation.

Ingestion: Harmful if swallowed. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea.

Data for Diethanolamine (CAS 111-42-2):

Acute Toxicity Data:
Oral LD50 (rat): 1,410 mg/kg

- Dermal LD50 (rabbit): 12,983.88 mg/kg
- Skin irritation: strong
- Eye irritation: Corrosive

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:

- Inhalation (30-day, guinea pig): NOAEL; 0.6 ppm
- Feeding study (30-day, male rat): Lowest observable effect level; 0.1 % in diet

Data for Hydroquinone (CAS 123-31-9):

Acute Toxicity Data:

Oral LD50 (rat): 400 mg/kg

- Dermal LD50 (guinea pig): > 1,000 mg/kg
- Dermal absorption rate: 1.1 micrograms (s) / cm 2 / hour
- Skin irritation: slight
- Skin Sensitization (guinea pig): positive
- Eye irritation: moderate

Mutagenicity/Genotoxicity Data:

Salmonella typhimurium assay (Ames test): negative (in presence and absence of activation)

- Chromosomal aberration assay: negative (in absence of activation)
- Chromosomal aberration assay: positive (in presence of activation)
- Sister chromatid exchange (SCE) assay: 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:

- Dermal (17-day, rat): NOEL; 3800 mg/kg/day
- Dermal (17-day): Lowest observable effect level; 4800 mg/kg/day

Developmental Toxicity Data:

Oral (female rabbit): NOEL for developmental toxicity; 25mg/kg/day

Data for Sodium bisulphite (CAS 7631-90-5):

Acute Toxicity Data:

Oral LD50 (rat): > 1,600 mg/kg

- Eye irritation (May irritate eyes.): mild

Data for 4-hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidinone (CAS 13047-13-7):

Acute Toxicity Data:

Oral LD50 (rat): 566 mg/kg

- Dermal LD50: > 1,000 mg/kg
- Skin irritation: slight
- Skin irritation: slight exacerbation (repeated skin application)
- Skin Sensitization: slight

- Eye irritation (unwashed eyes): strong
- Eye irritation (washed eyes): slight to moderate

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): NOEL; 88 mg/kg/day
- Oral (12-day, rat): Lowest observable effect level; 440 mg/kg/day (target organ effects: blood, target organ effects: testes)
- Oral (28-day, rat): NOEL; 10 mg/kg/day
- Oral (28-day, rat): Lowest observable effect level; 40 mg/kg/day (target organ effects: blood, target organ effects: testes)

12. Ecological information

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

Potential Toxicity:

Toxicity to fish (LC50):	1 - 10 mg/l
Toxicity to daphnia (EC50):	Daphnia: 1 - 10 mg/l

Persistence and degradability: Readily biodegradable.

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

Not regulated for all modes of transportation.

For more transportation information, go to: www.kodak.com/go/ship.

15. Regulatory information

Notification status

Regulatory List	Notification status
TSCA	All listed
DSL	All listed
NDSL	None listed
EINECS	All listed

ELINCS	None listed
NLP	None listed
AICS	All listed
IECS	All listed
ENCS	All listed
ECI	All listed
NZIoC	All listed
PICCS	All listed

"Not all listed" indicates one or more component is either not on the public Inventory or is subject to exemption requirements. If additional information is needed contact Kodak.

Other regulations

American Conference of Governmental Industrial Hygienists (ACGIH):	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans: Diethanolamine, Hydroquinone
International Agency for Research on Cancer (IARC):	Group 2B - Possibly Carcinogenic to Humans: Diethanolamine
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):	OSHA Carcinogen or Potential Carcinogen: Diethanolamine
California Prop. 65	WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
U.S. - CERCLA/SARA (40 CFR § 302.4 Designation of hazardous substances):	Diethanolamine, Hydroquinone, Sodium bisulphite
U.S. - CERCLA/SARA - Section 302 (40 CFR § 355 Appendices A and B - The List of Extremely Hazardous Substances and Their Threshold Planning Quantities):	Sulphur dioxide, Hydroquinone
U.S. - CERCLA/SARA - Section 313 (40 CFR § 372.65 Toxic Chemical Release Reporting):	Diethanolamine, Hydroquinone
U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances:	Diethanolamine, Sulphur dioxide, Hydroquinone, Sodium bisulphite
U.S. - California - 8 CCR Section 5200-5220 - Specifically Regulated Carcinogens:	No components found on the California Specifically Regulated Carcinogens List.

U.S. - California - 8 CCR Section 5203 Carcinogens:	No components found on the California Section 5203 Carcinogens List.
U.S. - California - 8 CCR Section 5209 Carcinogens:	No components found on the California Section 5209 Carcinogens List.
U.S. - Massachusetts - General Law Chapter 111F (MGL c 111F) - Hazardous Substances Disclosure by Employers (a.k.a. Right to Know Law):	Diethanolamine, Sulphur dioxide, Hydroquinone, Sodium bisulphite
U.S. - Minnesota Employee Right-to-Know (5206.0400, Subpart 5. List of Hazardous Substances):	Diethanolamine, Sulphur dioxide, Hydroquinone, Sodium bisulphite
U.S. - New Jersey - Worker and Community Right to Know Act (N.J.S.A. 34:5A-1):	Diethanolamine, Sulphur dioxide, Hydroquinone, Sodium bisulphite
U.S. - Pennsylvania - Part XIII. Worker and Community Right-to-Know Act (Chapter 323 Hazardous Substance List, Appendix A):	Water, Diethanolamine, Sulphur dioxide, Hydroquinone, Sodium bisulphite

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:

KODAK T-MAX RS Developer and Replenisher, Part A
CONTAINS: Diethanolamine (111-42-2), Sulphur dioxide (7446-09-5), Hydroquinone (123-31-9), Sodium bisulphite (7631-90-5), 4-hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidinone (13047-13-7). WARNING! HARMFUL IF INHALED, ABSORBED THROUGH SKIN, OR SWALLOWED. CAUSES SKIN AND EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. CAN CAUSE LUNG DAMAGE. MAY CAUSE LIVER DAMAGE BASED ON ANIMAL DATA. MAY CAUSE KIDNEY DAMAGE BASED ON ANIMAL DATA. MAY CAUSE BLOOD DISORDERS BASED ON ANIMAL DATA.
Do not breathe vapours or spray mist. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation. Wash thoroughly after handling. **FIRST AID:** If inhaled, remove to fresh air. Get medical attention. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention. 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, only induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control centre immediately. 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. **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.

The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent

determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment. The information relating to the working solution is for guidance purposes only, and is based on correct mixing and use of the product according to instructions.

R-1, S-2, F-1, C-0

Material Safety Data Sheet

Kodak

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

Product name: KODAK T-MAX RS Developer and Replenisher, Part B

Product code: 5054184 - Part B

Supplier: EASTMAN KODAK COMPANY, 343 State Street, Rochester, New York 14650

For Emergency Health, Safety & Environmental Information, call (585) 722-5151 (USA)

For further information about this product, call (800) 242-2424.

Synonyms: PCD F1220

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

2. Hazards identification

CONTAINS: Diethylene glycol (111-46-6), Acetic acid (64-19-7), 1,4-diphenyl-3-(phenylammonio)-1H-1,2,4-triazolium (2218-94-2)

WARNING!
MAY FORM EXPLOSIVE PEROXIDES
HARMFUL IF SWALLOWED
CAUSES EYE IRRITATION
MAY CAUSE ALLERGIC SKIN REACTION
CAN CAUSE KIDNEY DAMAGE AND CNS EFFECTS FOLLOWING INGESTION

HMIS III Hazard Ratings: Health - 2*, Flammability - 1, Physical Hazard - 0

NFPA Hazard Ratings: Health - 2, Flammability - 1, Instability - 1

NOTE: HMIS III and NFPA 704 (2007) 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. To adequately address safe handling, ALL information in this MSDS must be considered.

3. Composition/information on ingredients

Weight percent	Components - (CAS-No.)
90 - 99	Diethylene glycol (111-46-6)
1 - 5	Acetic acid (64-19-7)
0.1 - < 1	1,4-diphenyl-3-(phenylammonio)-1H-1,2,4-triazolium (2218-94-2)

4. First aid measures

Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms occur.

Eyes: Rinse immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

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

Ingestion: If swallowed, do NOT induce vomiting. Give victim a glass of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

5. Fire-fighting measures

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

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing.

Hazardous Combustion Products: Carbon oxides

Unusual Fire and Explosion Hazards: Forms peroxides of unknown stability.

6. Accidental release measures

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination.

7. Handling and storage

Personal precautions: Avoid breathing mist or vapour at concentrations greater than the exposure limits. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling.

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. After opening, purge container with nitrogen before reclosing. Periodically test for peroxide formation on long-term storage. Do not distill or allow to evaporate to near dryness. Keep material from heat, light, and flame.

Storage: Protect against light. Keep container tightly closed. Keep away from incompatible substances (see Incompatibility section.)

8. Exposure controls/personal protection

Occupational exposure controls

Chemical Name	Regulatory List	Value Type	Value
Acetic acid	ACGIH	time weighted average	10 ppm
		Short term exposure limit	15 ppm
	OSHA	time weighted average	10 ppm 25 mg/m3

Ventilation: Good general ventilation should be used. Ventilation should be sufficient so that applicable occupational exposure limits are not exceeded. Ventilation rates should be matched to conditions.

Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special circumstances.

Respiratory protection: None should be needed. If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. Respirator type: full-face with organic vapour & P95 particulate filter. 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.

Hand protection: For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.

9. Physical and chemical properties

Physical form: liquid

Colour: amber

Odour: vinegar

Specific gravity: 1.12

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

Vapour density: 0.6

Boiling point/boiling range: > 100 °C (> 212.0 °F)

Water solubility: complete

pH: no data available

Flash point: > 93.33 °C (> 200.0 °F) estimated

10. Stability and reactivity

Stability: Stable; however, forms peroxides of unknown stability.

Incompatibility: Strong oxidizing agents.

Hazardous decomposition products: None under normal conditions of use.

Hazardous Polymerization: Hazardous polymerisation does not occur.

11. Toxicological information

Effects of Exposure

General advice:

Contains: Diethylene glycol. Can cause kidney damage and CNS effects following ingestion. Repeated oral exposure to high doses can cause liver damage.

Contains: 1,4-diphenyl-3-(phenylammonio)-1H-1,2,4-triazolium. The toxicological properties of this material have not been fully investigated and its handling and use may present additional hazards.

Inhalation: Expected to be a low hazard for recommended handling.

Eyes: Causes eye irritation. However, immediate flushing of the eyes with water will minimize any irritative effect. Airborne dust/mist/vapor irritating.

Skin: May cause allergic skin reaction.

Ingestion: Harmful if swallowed.

Data for Diethylene glycol (CAS 111-46-6):

Acute Toxicity Data:
Oral LD50 (rat): 12,565 mg/kg

- Inhalation LC50 (rat): > 5.08 mg/l / 4 hr
- Dermal LD50 (rabbit): 11,890 mg/kg
- Skin irritation: slight to moderate
- Eye irritation: mild

Mutagenicity/Genotoxicity Data:
Ames test: negative (in presence and absence of activation)

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

Acute Toxicity Data:
Oral LD50 (rat): 3,310 - 3,530 mg/kg

- Inhalation LC50 (rat): 11.4 mg/l 4641 ppm / 4 hr
- Dermal LD50: 1,060 mg/kg
- Skin irritation: severe
- Eye irritation (washed eyes): severe
- Eye irritation (unwashed eyes): severe

Data for 1,4-diphenyl-3-(phenylammonio)-1H-1,2,4-triazolium (CAS 2218-94-2):

Acute Toxicity Data:
Oral LD50 (rat): 50 - 400 mg/kg

- Dermal LD50 (guinea pig): > 2,200 mg/kg
- Skin irritation: very slight

12. Ecological information

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

Potential Toxicity:

Toxicity to fish (LC50):	> 100 mg/l
Toxicity to daphnia (EC50):	> 100 mg/l
Toxicity to algae (IC50):	> 100 mg/l
Toxicity to other organisms (EC50):	> 100 mg/l
Persistence and degradability:	Readily biodegradable.
Chemical Oxygen Demand (COD):	ca. 1731 g/l
Biochemical Oxygen Demand (BOD):	ca. 206 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

Not regulated for all modes of transportation.

For more transportation information, go to: www.kodak.com/go/ship.

15. Regulatory information

Notification status

Regulatory List	Notification status
TSCA	All listed
DSL	All listed
NDSL	None listed
EINECS	All listed
ELINCS	None listed
NLP	None listed
AICS	All listed
IECS	All listed
ENCS	Not all listed
ECI	All listed
NZIoC	All listed
PICCS	Not all listed

"Not all listed" indicates one or more component is either not on the public Inventory or is subject to exemption requirements. If additional information is needed contact Kodak.

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 defects, or any other reproductive harm.
U.S. - CERCLA/SARA (40 CFR § 302.4 Designation of hazardous substances):	Acetic acid
U.S. - CERCLA/SARA - Section 302 (40 CFR § 355 Appendices A and B - The List of Extremely Hazardous Substances and Their Threshold Planning Quantities):	No components of this product are subject to the SARA Section 302 (40 CFR 355) reporting requirements.
U.S. - CERCLA/SARA - Section 313 (40 CFR § 372.65 Toxic Chemical Release Reporting):	No components of this product are subject to the SARA Section 313 (40 CFR 372.65) reporting requirements.
U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances:	Acetic acid
U.S. - California - 8 CCR Section 5200-5220 - Specifically Regulated Carcinogens:	No components found on the California Specifically Regulated Carcinogens List.
U.S. - California - 8 CCR Section 5203 Carcinogens:	No components found on the California Section 5203 Carcinogens List.
U.S. - California - 8 CCR Section 5209 Carcinogens:	No components found on the California Section 5209 Carcinogens List.

U.S. - Massachusetts - General Law Chapter 111F (MGL c 111F) - Hazardous Substances Disclosure by Employers (a.k.a. Right to Know Law):	Acetic acid
U.S. - Minnesota Employee Right-to-Know (5206.0400, Subpart 5. List of Hazardous Substances):	Diethylene glycol, Acetic acid
U.S. - New Jersey - Worker and Community Right to Know Act (N.J.S.A. 34:5A-1):	Acetic acid
U.S. - Pennsylvania - Part XIII. Worker and Community Right-to-Know Act (Chapter 323 Hazardous Substance List, Appendix A):	Diethylene glycol, Acetic acid
U.S. - Rhode Island - Title 28 Labor and Labor Relations (Chapters 28-21 Hazardous Substance Right-to-Know Act):	Diethylene glycol, Acetic acid

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:

KODAK T-MAX RS Developer and Replenisher, Part B
CONTAINS: Diethylene glycol (111-46-6), Acetic acid (64-19-7), 1,4-diphenyl-3-(phenylammonio)-1H-1,2,4-triazolium (2218-94-2).
WARNING! MAY FORM EXPLOSIVE PEROXIDES. HARMFUL IF SWALLOWED. CAUSES EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. CAN CAUSE KIDNEY DAMAGE AND CNS EFFECTS FOLLOWING INGESTION.
Keep container tightly closed. Store away from heat and light. Do not allow to evaporate to near dryness. Avoid breathing mist or vapour at concentrations greater than the exposure limits. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling. **FIRST AID:** If symptomatic, move to fresh air. Get medical attention if symptoms occur. Rinse immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur. In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes. If swallowed, do NOT induce vomiting. Give victim a glass of water. Never give anything by mouth to an unconscious person. Get medical attention immediately. 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. **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.

The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment. The information relating to the working solution is for guidance purposes only, and is based on correct mixing and use of the product according to instructions.

Material Safety Data Sheet

Kodak

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

Product name: KODAK T-MAX RS Developer and Replenisher, Part B

Product code: 8446163 - Part B

Supplier: EASTMAN KODAK COMPANY, 343 State Street, Rochester, New York 14650

For Emergency Health, Safety & Environmental Information, call (585) 722-5151 (USA)

For further information about this product, call (800) 242-2424.

Synonyms: PCD 5506

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

2. Hazards identification

CONTAINS: Diethylene glycol (111-46-6), Acetic acid (64-19-7), 1,4-diphenyl-3-(phenylammonio)-1H-1,2,4-triazolium (2218-94-2)

WARNING!
MAY FORM EXPLOSIVE PEROXIDES
HARMFUL IF SWALLOWED
CAUSES EYE IRRITATION
MAY CAUSE ALLERGIC SKIN REACTION
CAN CAUSE KIDNEY DAMAGE AND CNS EFFECTS FOLLOWING INGESTION

HMIS III Hazard Ratings: Health - 2*, Flammability - 1, Physical Hazard - 0

NFPA Hazard Ratings: Health - 2, Flammability - 1, Instability - 1

NOTE: HMIS III and NFPA 704 (2007) 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. To adequately address safe handling, ALL information in this MSDS must be considered.

3. Composition/information on ingredients

Weight percent	Components - (CAS-No.)
90 - 99	Diethylene glycol (111-46-6)
1 - 5	Acetic acid (64-19-7)
0.1 - < 1	1,4-diphenyl-3-(phenylammonio)-1H-1,2,4-triazolium (2218-94-2)

4. First aid measures

Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms occur.

Eyes: Rinse immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

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

Ingestion: If swallowed, do NOT induce vomiting. Give victim a glass of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

5. Fire-fighting measures

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

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing.

Hazardous Combustion Products: Carbon oxides

Unusual Fire and Explosion Hazards: Forms peroxides of unknown stability.

6. Accidental release measures

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination.

7. Handling and storage

Personal precautions: Avoid breathing mist or vapour at concentrations greater than the exposure limits. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling.

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. After opening, purge container with nitrogen before reclosing. Periodically test for peroxide formation on long-term storage. Do not distill or allow to evaporate to near dryness. Keep material from heat, light, and flame.

Storage: Protect against light. Keep container tightly closed. Keep away from incompatible substances (see Incompatibility section.)

8. Exposure controls/personal protection

Occupational exposure controls

Chemical Name	Regulatory List	Value Type	Value
Acetic acid	ACGIH	time weighted average	10 ppm
		Short term exposure limit	15 ppm
	OSHA	time weighted average	10 ppm 25 mg/m3

Ventilation: Good general ventilation should be used. Ventilation should be sufficient so that applicable occupational exposure limits are not exceeded. Ventilation rates should be matched to conditions.

Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special circumstances.

Respiratory protection: None should be needed. If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. Respirator type: full-face with organic vapour & P95 particulate filter. 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.

Hand protection: For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.

9. Physical and chemical properties

Physical form: liquid

Colour: amber

Odour: vinegar

Specific gravity: 1.12

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

Vapour density: 0.6

Boiling point/boiling range: > 100 °C (> 212.0 °F)

Water solubility: complete

pH: no data available

Flash point: > 93.33 °C (> 200.0 °F)

10. Stability and reactivity

Stability: Stable; however, forms peroxides of unknown stability.

Incompatibility: Strong oxidizing agents.

Hazardous decomposition products: None under normal conditions of use.

Hazardous Polymerization: Hazardous polymerisation does not occur.

11. Toxicological information

Effects of Exposure

General advice:

Contains: Diethylene glycol. Can cause kidney damage and CNS effects following ingestion. Repeated oral exposure to high doses can cause liver damage.

Contains: 1,4-diphenyl-3-(phenylammonio)-1H-1,2,4-triazolium. The toxicological properties of this material have not been fully investigated and its handling and use may present additional hazards.

Inhalation: Expected to be a low hazard for recommended handling.

Eyes: Causes eye irritation. However, immediate flushing of the eyes with water will minimize any irritative effect. Airborne dust/mist/vapor irritating.

Skin: May cause allergic skin reaction.

Ingestion: Harmful if swallowed.

Data for Diethylene glycol (CAS 111-46-6):

Acute Toxicity Data:
Oral LD50 (rat): 12,565 mg/kg

- Inhalation LC50 (rat): > 5.08 mg/l / 4 hr
- Dermal LD50 (rabbit): 11,890 mg/kg
- Skin irritation: slight to moderate
- Eye irritation: mild

Mutagenicity/Genotoxicity Data:
Ames test: negative (in presence and absence of activation)

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

Acute Toxicity Data:
Oral LD50 (rat): 3,310 - 3,530 mg/kg

- Inhalation LC50 (rat): 11.4 mg/l 4641 ppm / 4 hr
- Dermal LD50: 1,060 mg/kg
- Skin irritation: severe
- Eye irritation (washed eyes): severe
- Eye irritation (unwashed eyes): severe

Data for 1,4-diphenyl-3-(phenylammonio)-1H-1,2,4-triazolium (CAS 2218-94-2):

Acute Toxicity Data:
Oral LD50 (rat): 50 - 400 mg/kg

- Dermal LD50 (guinea pig): > 2,200 mg/kg
- Skin irritation: very slight

12. Ecological information

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

Potential Toxicity:

Toxicity to fish (LC50):	> 100 mg/l
Toxicity to daphnia (EC50):	> 100 mg/l
Toxicity to algae (IC50):	> 100 mg/l
Toxicity to other organisms (EC50):	> 100 mg/l
Persistence and degradability:	Readily biodegradable.
Chemical Oxygen Demand (COD):	ca. 1731 g/l
Biochemical Oxygen Demand (BOD):	ca. 206 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

Not regulated for all modes of transportation.

For more transportation information, go to: www.kodak.com/go/ship.

15. Regulatory information

Notification status

Regulatory List	Notification status
TSCA	All listed
DSL	All listed
NDSL	None listed
EINECS	All listed
ELINCS	None listed
NLP	None listed
AICS	All listed
IECS	All listed
ENCS	Not all listed
ECI	All listed
NZIoC	All listed
PICCS	Not all listed

"Not all listed" indicates one or more component is either not on the public Inventory or is subject to exemption requirements. If additional information is needed contact Kodak.

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 defects, or any other reproductive harm.
U.S. - CERCLA/SARA (40 CFR § 302.4 Designation of hazardous substances):	Acetic acid
U.S. - CERCLA/SARA - Section 302 (40 CFR § 355 Appendices A and B - The List of Extremely Hazardous Substances and Their Threshold Planning Quantities):	No components of this product are subject to the SARA Section 302 (40 CFR 355) reporting requirements.
U.S. - CERCLA/SARA - Section 313 (40 CFR § 372.65 Toxic Chemical Release Reporting):	No components of this product are subject to the SARA Section 313 (40 CFR 372.65) reporting requirements.
U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances:	Acetic acid
U.S. - California - 8 CCR Section 5200-5220 - Specifically Regulated Carcinogens:	No components found on the California Specifically Regulated Carcinogens List.
U.S. - California - 8 CCR Section 5203 Carcinogens:	No components found on the California Section 5203 Carcinogens List.
U.S. - California - 8 CCR Section 5209 Carcinogens:	No components found on the California Section 5209 Carcinogens List.

U.S. - Massachusetts - General Law Chapter 111F (MGL c 111F) - Hazardous Substances Disclosure by Employers (a.k.a. Right to Know Law):	Acetic acid
U.S. - Minnesota Employee Right-to-Know (5206.0400, Subpart 5. List of Hazardous Substances):	Diethylene glycol, Acetic acid
U.S. - New Jersey - Worker and Community Right to Know Act (N.J.S.A. 34:5A-1):	Acetic acid
U.S. - Pennsylvania - Part XIII. Worker and Community Right-to-Know Act (Chapter 323 Hazardous Substance List, Appendix A):	Diethylene glycol, Acetic acid
U.S. - Rhode Island - Title 28 Labor and Labor Relations (Chapters 28-21 Hazardous Substance Right-to-Know Act):	Diethylene glycol, Acetic acid

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:

KODAK T-MAX RS Developer and Replenisher, Part B
CONTAINS: Diethylene glycol (111-46-6), Acetic acid (64-19-7), 1,4-diphenyl-3-(phenylammonio)-1H-1,2,4-triazolium (2218-94-2).
WARNING! MAY FORM EXPLOSIVE PEROXIDES. HARMFUL IF SWALLOWED. CAUSES EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. CAN CAUSE KIDNEY DAMAGE AND CNS EFFECTS FOLLOWING INGESTION.
Keep container tightly closed. Store away from heat and light. Do not allow to evaporate to near dryness. Avoid breathing mist or vapour at concentrations greater than the exposure limits. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling. **FIRST AID:** If symptomatic, move to fresh air. Get medical attention if symptoms occur. Rinse immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur. In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes. If swallowed, do NOT induce vomiting. Give victim a glass of water. Never give anything by mouth to an unconscious person. Get medical attention immediately. 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. **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.

The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment. The information relating to the working solution is for guidance purposes only, and is based on correct mixing and use of the product according to instructions.

R-1, S-2, F-1, C-1E

Material Safety Data Sheet

Kodak

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

Product name: KODAK POLYMAX T Developer

Product code: 1388354

Supplier: EASTMAN KODAK COMPANY, 343 State Street, Rochester, New York 14650

For Emergency Health, Safety & Environmental Information, call (585) 722-5151 (USA)

For further information about this product, call (800) 242-2424.

Synonyms: PCD 4988

Product Use: Professional photographic processing solution, For industrial use only.

2. Hazards identification

CONTAINS: Potassium sulphite (10117-38-1), Diethylene glycol (111-46-6), Hydroquinone (123-31-9), Potassium hydroxide (1310-58-3), Sodium bromide (7647-15-6), 1-phenyl-4,4-dimethyl-3-pyrazolidinone (2654-58-2), Bis(4-hydroxy-N-methylanilinium) sulphate (55-55-0), Potassium carbonate (584-08-7)

DANGER!
CAUSES EYE BURNS
CAUSES SKIN IRRITATION
MAY CAUSE ALLERGIC SKIN REACTION
HARMFUL IF SWALLOWED
CAN CAUSE KIDNEY DAMAGE AND CNS EFFECTS FOLLOWING INGESTION

HMIS III Hazard Ratings: Health - 3*, Flammability - 1, Physical Hazard - 0

NFPA Hazard Ratings: Health - 3, Flammability - 1, Instability - 0

NOTE: HMIS III and NFPA 704 (2007) 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. To adequately address safe handling, ALL information in this MSDS must be considered.

3. Composition/information on ingredients

Weight percent	Components - (CAS-No.)
15 - 20	Potassium sulphite (10117-38-1)
10 - 15	Potassium carbonate (584-08-7)
10 - 15	Diethylene glycol (111-46-6)
1 - 5	Hydroquinone (123-31-9)
0.5 - < 3	Potassium hydroxide (1310-58-3)
0.1 - < 1	Bis(4-hydroxy-N-methylanilinium) sulphate (55-55-0)

0.1 - < 1	1-phenyl-4,4-dimethyl-3-pyrazolidinone (2654-58-2)
0.1 - < 1	Sodium bromide (7647-15-6)

4. First aid measures

Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms occur.

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.

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. Never give anything by mouth to an unconscious person. Call a physician or poison control centre immediately.

5. Fire-fighting measures

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

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Fire or excessive heat may produce hazardous decomposition products.

Hazardous Combustion Products: Carbon oxides, Sulphur oxides, (see also Hazardous Decomposition Products sections.)

Unusual Fire and Explosion Hazards: None.

6. Accidental release measures

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination.

7. Handling and storage

Personal precautions: Avoid breathing mist or vapour at concentrations greater than the exposure limits. Do not get in eyes and avoid contact with skin and clothing. Use only with adequate ventilation. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

Prevention of Fire and Explosion: Keep from contact with oxidizing materials.

Storage: Keep container tightly closed. Keep away from incompatible substances (see Incompatibility section.)

8. Exposure controls/personal protection

Occupational exposure controls

Chemical Name	Regulatory List	Value Type	Value
Hydroquinone	ACGIH	time weighted average	1 mg/m3
	OSHA	time weighted average	2 mg/m3
Sulphur dioxide	ACGIH	Short term exposure limit	0.25 ppm
	OSHA	time weighted average	5 ppm 13 mg/m3

Ventilation: Good general ventilation should be used. Ventilation should be sufficient so that applicable occupational exposure limits are not exceeded. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special circumstances.

Respiratory protection: None should be needed. If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. 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.

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

9. Physical and chemical properties

Physical form: liquid

Colour: light tan

Odour: odourless

Specific gravity: 1.35

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

Vapour density: 0.6

Boiling point/boiling range: > 100 °C (> 212.0 °F)

Water solubility: completely soluble

pH: 11.6

Flash point: does not flash

10. Stability and reactivity

Stability: Stable under normal conditions.

Incompatibility: Strong oxidizing agents, Acids. Contact with strong acids liberates sulphur dioxide.

Hazardous decomposition products: Sulphur oxides

Hazardous Polymerization: Hazardous polymerisation does not occur.

11. Toxicological information

Effects of Exposure

General advice:

Contains: Diethylene glycol. Can cause kidney damage and CNS effects following ingestion. Repeated oral exposure to high doses can cause liver damage.

Contains: Hydroquinone. There is insufficient evidence for classifying hydroquinone as a suspected carcinogenic or mutagenic substance in humans. No increases in cancer rates were observed in an epidemiology study which looked at mortality among more than 800 persons employed primarily in the manufacture of hydroquinone. Carcinogenicity studies in animals were inconclusive. Rats and mice were given hydroquinone by stomach tube or at high concentrations in the diet. Responses were not consistent across route of exposure, species or sex. The International Agency for Research on Cancer (IARC) has classified hydroquinone in Group 3, i.e., "not classifiable" as a carcinogen. Hydroquinone is generally negative in bacterial mutagenicity tests; there is evidence for the clastogenicity (chromosome breakage) of hydroquinone in vivo and in vitro. The relevance of chromosomal effects in test animals in predicting human risk is unclear.

Contains: 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.

Contains: 1-phenyl-4,4-dimethyl-3-pyrazolidinone. Based on repeated-dose ingestion studies in animals, this chemical may cause blood, testicular, and adverse reproductive effects.

Contains: Bis(4-hydroxy-N-methylanilinium) sulphate. Based on animal data, may cause adverse effects on the following organs/systems: blood, kidney, spleen. Based on animal data this material can produce methemoglobin which, in sufficient concentration, causes cyanosis, a blue-gray discoloration of the skin and lips caused by a reduced ability of the blood to carry oxygen.

Inhalation: Expected to be a low hazard for recommended handling. In contact with strong acids or if heated, sulphites may liberate sulphur dioxide gas. Sulphur dioxide gas is irritating to the respiratory tract. Some asthmatics or hypersensitive individuals may experience difficult breathing.

Eyes: Causes eye burns.

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

Ingestion: Harmful if swallowed. Can cause kidney damage and CNS effects following ingestion. May cause irritation of the gastrointestinal tract. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea.

Data for Potassium sulphite (CAS 10117-38-1):

Acute Toxicity Data:
Oral LD50 (rat): > 3,200 mg/kg

- Oral LD50 (mouse): > 3,200 mg/kg
- Dermal LD50 (guinea pig): > 20,000 mg/kg
- Skin irritation: slight to moderate

Data for Potassium carbonate (CAS 584-08-7):

Acute Toxicity Data:
Oral LD50 (rat): 1,870 mg/kg

Data for Diethylene glycol (CAS 111-46-6):

Acute Toxicity Data:
Oral LD50 (rat): 12,565 mg/kg

- Inhalation LC50 (rat): > 5.08 mg/l / 4 hr
- Dermal LD50 (rabbit): 11,890 mg/kg
- Skin irritation: slight to moderate
- Eye irritation: mild

Mutagenicity/Genotoxicity Data:
Ames test: negative (in presence and absence of activation)

Data for Hydroquinone (CAS 123-31-9):

Acute Toxicity Data:
Oral LD50 (rat): 400 mg/kg

- Dermal LD50 (guinea pig): > 1,000 mg/kg
- Dermal absorption rate: 1.1 micrograms (s) / cm 2 / hour
- Skin irritation: slight
- Skin Sensitization (guinea pig): positive
- Eye irritation: moderate

Mutagenicity/Genotoxicity Data:
Salmonella typhimurium assay (Ames test): negative (in presence and absence of activation)

- Chromosomal aberration assay: negative (in absence of activation)
- Chromosomal aberration assay: positive (in presence of activation)
- Sister chromatid exchange (SCE) assay: 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:

- Dermal (17-day, rat): NOEL; 3800 mg/kg/day
- Dermal (17-day): Lowest observable effect level; 4800 mg/kg/day

Developmental Toxicity Data:
Oral (female rabbit): NOEL for developmental toxicity; 25mg/kg/day

Data for Potassium hydroxide (CAS 1310-58-3):

Acute Toxicity Data:
Oral LD50 (rat): 273 mg/kg
- Skin irritation: severe

Data for Sodium bromide (CAS 7647-15-6):

Acute Toxicity Data:
Oral LD50 (rat): 3,400 mg/kg
- Dermal LD50 (rabbit): > 2,000 mg/kg
- Skin irritation: none
- Skin Sensitization: none
- Eye irritation: slight

Data for 1-phenyl-4,4-dimethyl-3-pyrazolidinone (CAS 2654-58-2):

Acute Toxicity Data:
Oral LD50 (rat): 25 - 50 mg/kg
- Dermal LD50 (guinea pig): > 1,000 mg/kg
- Skin irritation: slight
- Skin Sensitization (guinea pig): moderate

Data for Bis(4-hydroxy-N-methylanilinium) sulphate (CAS 55-55-0):

Acute Toxicity Data:
Oral LD50 (rat): 237 mg/kg
- Oral LD50 (mouse): 565 mg/kg
- Dermal LD50 (guinea pig): > 1,000 mg/kg (highest dose tested)
- Skin irritation: slight
- Skin irritation: slight to moderate (repeated skin application)
- Skin Sensitization: positive
- Eye irritation (unwashed eyes): moderate to strong
- Eye irritation (washed eyes): slight

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 (11 days): Lowest observable effect level; 1.0 % in diet (reduced feed intake, reduced body weight gain, target organ effects: red blood cell)
- Oral (11 days): NOEL; 0.1 % in diet

12. Ecological information

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

Potential Toxicity:

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

Persistence and degradability: Readily biodegradable.

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

Not regulated for all modes of transportation.

For more transportation information, go to: www.kodak.com/go/ship.

15. Regulatory information

Notification status

Regulatory List	Notification status
TSCA	All listed
DSL	All listed
NDSL	None listed
EINECS	All listed
ELINCS	None listed
NLP	None listed
AICS	All listed
IECS	All listed
ENCS	All listed
ECI	All listed
NZIoC	All listed
PICCS	All listed

"Not all listed" indicates one or more component is either not on the public Inventory or is subject to exemption requirements. If additional information is needed contact Kodak.

Other regulations

American Conference of Governmental Industrial Hygienists A3 - Confirmed Animal Carcinogen

(ACGIH):	with Unknown Relevance to Humans: Hydroquinone
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	WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
U.S. - CERCLA/SARA (40 CFR § 302.4 Designation of hazardous substances):	Hydroquinone
U.S. - CERCLA/SARA - Section 302 (40 CFR § 355 Appendices A and B - The List of Extremely Hazardous Substances and Their Threshold Planning Quantities):	Hydroquinone
U.S. - CERCLA/SARA - Section 313 (40 CFR § 372.65 Toxic Chemical Release Reporting):	Hydroquinone
U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances:	Hydroquinone
U.S. - California - 8 CCR Section 5200-5220 - Specifically Regulated Carcinogens:	No components found on the California Specifically Regulated Carcinogens List.
U.S. - California - 8 CCR Section 5203 Carcinogens:	No components found on the California Section 5203 Carcinogens List.
U.S. - California - 8 CCR Section 5209 Carcinogens:	No components found on the California Section 5209 Carcinogens List.
U.S. - Massachusetts - General Law Chapter 111F (MGL c 111F) - Hazardous Substances Disclosure by Employers (a.k.a. Right to Know Law):	Hydroquinone
U.S. - Minnesota Employee Right-to-Know (5206.0400, Subpart 5. List of Hazardous Substances):	Diethylene glycol, Hydroquinone
U.S. - New Jersey - Worker and Community Right to Know Act (N.J.S.A. 34:5A-1):	Hydroquinone
U.S. - Pennsylvania - Part XIII. Worker and Community Right-to-Know Act (Chapter 323 Hazardous Substance	Water, Potassium sulphite, Potassium carbonate, Diethylene glycol,

List, Appendix A):	Hydroquinone, Potassium hydroxide

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:

KODAK POLYMAX T Developer
CONTAINS: Potassium sulphite (10117-38-1), Diethylene glycol (111-46-6), Hydroquinone (123-31-9), Potassium hydroxide (1310-58-3), Sodium bromide (7647-15-6), 1-phenyl-4,4-dimethyl-3-pyrazolidinone (2654-58-2), Bis(4-hydroxy-N-methylanilinium) sulphate (55-55-0), Potassium carbonate (584-08-7).
DANGER! CAUSES EYE BURNS. CAUSES SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. HARMFUL IF SWALLOWED. CAN CAUSE KIDNEY DAMAGE AND CNS EFFECTS FOLLOWING INGESTION.
Avoid breathing mist or vapour at concentrations greater than the exposure limits. Do not get in eyes and avoid contact with skin and clothing. Use only with adequate ventilation. Wash thoroughly after handling. **FIRST AID:** If symptomatic, move to fresh air. Get medical attention if symptoms occur. 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. 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. Never give anything by mouth to an unconscious person. Call a physician or poison control centre immediately. 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. **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.

The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment. The information relating to the working solution is for guidance purposes only, and is based on correct mixing and use of the product according to instructions.

R-1, S-3, F-1, C-0