

Safety Data Sheet

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Kodak alaris

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

Product name: KODAK POLYMAX Developer

Product code: 5211362

Synonyms: PCD 5318

Relevant identified uses of the substance or mixture and uses advised against:

Identified uses: photographic processing chemical. For industrial use only.

Supplier: Kodak Alaris Inc., 2400 Mount Read Boulevard, Rochester, NY 14615

IN EMERGENCY, telephone: 1-800-424-9300 or +1 703-527-3887.

For further information about this product, email EHS-Questions@Kodakalaris.com.

2. Hazards identification

Classification of the chemical in accordance with paragraph (d) of 29 CFR 1910.1200:

Hazard class	Hazard category	Route of exposure
Serious eye damage	Category 2	--
Skin sensitisation	Category 1	--
Reproductive toxicity	Category 2	Oral

GHS-Labeling

Contains:

Potassium carbonate (584-08-7), Hydroquinone (123-31-9), Pentetic acid, pentasodium salt (140-01-2), 4-hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidinone (13047-13-7), Potassium sulphite (10117-38-1), Sodium sulphite (7757-83-7)

Symbol(s):



Signal word: Warning

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Hazard statements: Causes serious eye irritation. May cause an allergic skin reaction. Suspected of damaging fertility or the unborn child if swallowed.

Precautionary statements:

Prevention: Wear protective gloves/eye protection/face protection. Use personal protective equipment as required. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Response: IF exposed or concerned: Get medical advice/ attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/ attention. Wash contaminated clothing before reuse.

Storage: Store in a well-ventilated place. Keep cool.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulation.

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

NFPA Hazard Ratings: Health - 3, Flammability - 0, 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.)
5 - 10	Potassium sulphite (10117-38-1)
5 - 10	Sodium sulphite (7757-83-7)
5 - 10	Potassium carbonate (584-08-7)
1 - 5	Hydroquinone (123-31-9)
1 - 5	Pentetic acid, pentasodium salt (140-01-2)
0.1 - < 1	4-hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidinone (13047-13-7)
0.1 - < 1	Sodium bromide (7647-15-6)

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4. First aid measures

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

Eyes: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention.

Skin: IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/ attention. Take off contaminated clothing and wash before reuse.

Ingestion: Call a POISON CENTER or doctor/ physician if you feel unwell.

Most important symptoms and effects, both acute and delayed: No information available.

Indication of any immediate medical attention and special treatment needed:

Treatment: No information available.

5. Firefighting measures

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

Special hazards arising from the substance or mixture

Hazardous Combustion Products: None (noncombustible), (see also Hazardous Decomposition Products sections.)

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

Unusual Fire and Explosion Hazards: None.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Refer to protective measures listed in sections 7 and 8.

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

Environmental precautions: No information available.

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7. Handling and storage

Precautions for safe handling

Personal precautions: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Prevention of Fire and Explosion: No special technical protective measures required.

Conditions for safe storage, including any incompatibilities: 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
Hydroquinone	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

Appropriate engineering controls: 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.

Individual protection measures, such as personal protective equipment

Eye protection: Wear eye/face protection.

Hand protection: Wear protective gloves/ protective clothing.

Respiratory protection: None should be needed. A respirator should be worn if hazardous decomposition products are likely to be or have been released. Respirator type: acid gas See Stability and Reactivity Section. If respirators are used, a program should be instituted to assure compliance with applicable federal, state, commonwealth, provincial, or local laws and regulations.

9. Physical and chemical properties

Physical form: liquid

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Colour: light tan

Odour: odourless

Specific gravity: 1.24

Vapour pressure: 24 mbar (18.0 mm Hg)

Vapour density: 0.6

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

Water solubility: complete

pH: 11.0

Flash point: does not flash

Evaporation rate: No data available

Flammability (Solid; gas): No data available

Upper explosion limit: No data available

Lower explosion limit: No data available

Partition coefficient: n-octanol/water: No data available

Auto-ignition temperature: No data available

Decomposition temperature: No data available

Viscosity: No data available

Explosive properties: No data available

Oxidizing properties: No data available

10. Stability and reactivity

Reactivity: No data available

Chemical stability: Stable under normal conditions.

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Possibility of hazardous reactions: Hazardous polymerisation does not occur.

Conditions to avoid: No data available

Incompatible materials: Acids. Contact with strong acids liberates sulphur dioxide.

Hazardous decomposition products: Sulphur oxides

11. Toxicological information

Effects of Exposure

General advice:

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.

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.

Inhalation: Expected to be a low hazard for recommended handling. Some asthmatics or hypersensitive individuals may experience difficulty breathing if exposed to aerosols or decomposition products that are not anticipated during normal use.

Eyes: Causes serious eye irritation.

Skin: May cause an allergic skin reaction.

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Ingestion: Expected to be a low ingestion hazard. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea.

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

Acute Toxicity Data:

Oral LD50 (male rat): 400 mg/kg

- Oral LD50 (male mouse): 100 - 200 mg/kg
- Dermal LD50 (guinea pig): > 1,000 mg/kg
- Dermal absorption rate: 1.1 micrograms (s) / cm² / 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
- Oral (female rat): NOAEL for developmental toxicity; mg/kg/day

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 Sodium sulphite (CAS 7757-83-7):

Acute Toxicity Data:

Oral LD50 (rat): 820 mg/kg

- Inhalation LC50 (rat): > 22 mg/l / 1 hr

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- Skin irritation: none
- Eye irritation: slight; washing palliative

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)

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 Pentetic acid, pentasodium salt (CAS 140-01-2):

Acute Toxicity Data:

Oral LD50 (male rat): 3,200 mg/kg

- Oral LD50 (female rat): 2,263 mg/kg
- Skin irritation: irritating
- Skin Sensitization: none
- Eye irritation: Corrosive

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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, male rat): NOEL; 100 mg/kg/day

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
Toxicity to algae (EC50):	10 - 100 mg/l

Persistence and degradability: Readily biodegradable.

Bioaccumulative potential

No data available

Mobility in soil

No information available.

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

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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: 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.

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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):	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 List, Appendix A):	Water , Potassium sulphite , Sodium sulphite , Potassium carbonate , Hydroquinone

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 Developer

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Contains:

Potassium carbonate (584-08-7), Hydroquinone (123-31-9), Pentetic acid, pentasodium salt (140-01-2), 4-hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidinone (13047-13-7), Potassium sulphite (10117-38-1), Sodium sulphite (7757-83-7)

Symbol(s):



Signal word: Warning

Hazard statements: Causes serious eye irritation. May cause an allergic skin reaction. Suspected of damaging fertility or the unborn child if swallowed.

Precautionary statements:

Prevention: Wear protective gloves/eye protection/face protection. Use personal protective equipment as required. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Response: IF exposed or concerned: Get medical advice/ attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/ attention. Wash contaminated clothing before reuse.

Storage: Store in a well-ventilated place. Keep cool.

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulation.

FIRST AID: If symptomatic, move to fresh air. Get medical attention if symptoms occur. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/ attention. Take off contaminated clothing and wash before reuse. Call a POISON CENTER or doctor/ physician if you feel unwell. 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 extinguishing measures that are appropriate to

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local circumstances and the surrounding environment. **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. Additional Components Include: Water (7732-18-5) , Potassium carbonate (584-08-7).

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-0, C-0 REPO