

Material Safety Data Sheet

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

Product name: KODAK Developer D-76

Product code: 1464817

Supplier: KODAK AUSTRALASIA Pty. Ltd., Level 2, 436 Johnston Street, Abbotsford, Victoria, 3067

For Chemical Emergency Information, in Australia call 1800 033111 (24 hour service Australia-wide); in New Zealand call 0800 734 607 (24 hour service); in Asia call +86 21 63500836

For Other Information, call 61 3 8417 8000.

Synonyms: PCD 5239

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

2. Hazards identification

STATEMENT OF HAZARDOUS NATURE: Hazardous according to criteria of Australian Safety and Compensation Council

Harmful. Harmful if swallowed. Limited evidence of a carcinogenic effect. Possible risk of irreversible effects. Irritating to eyes. May cause sensitization by skin contact. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Contains no scheduled poisons

3. Composition/information on ingredients

Weight percent	Components (CAS-No.)
85 - 90	Sodium sulphite (7757-83-7)
1 - 5	Hydroquinone (123-31-9)
1 - 5	Bis(4-hydroxy-N-methylanilinium) sulphate (55-55-0)
0.1 - <1	Pentetic acid, pentasodium salt (140-01-2)

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. If easy to do, remove contact lens, if worn. Get medical attention.

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.

Notes to physician:

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Treatment: Absorption of this material into the body leads to the formation of methemoglobin that, in sufficient concentration, causes cyanosis. Since reversion of methemoglobin to hemoglobin occurs spontaneously after termination of exposure, moderate degrees of cyanosis need to be treated only by supportive measures such as bed rest and oxygen inhalation. Thorough cleansing of the entire contaminated area of the body, including scalp and nails, is of utmost importance. If cyanosis is severe, intravenous injection of methylene blue, one milligram per kilogram of body weight, may be of value.

5. Fire-fighting measures

Hazchem Code: Not specified

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

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

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

Unusual Fire and Explosion Hazards: None.

6. Accidental release measures

Shovel into suitable container for disposal. Contaminated absorbent should be disposed of in accordance with local regulations. Clean surface thoroughly to remove residual contamination.

7. Handling and storage

Personal precautions: Do not breathe dust 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: No special technical protective measures required.

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	Exposure Standards	time weighted average	2 mg/m ³
Sulphur dioxide		time weighted average	2 ppm 5.2 mg/m ³
		Short term exposure limit	5 ppm 13 mg/m ³
Hydroquinone	New Zealand	time weighted average	2 mg/m ³
Sulphur dioxide		time weighted average	2 ppm 5.2 mg/m ³
		Short term exposure limit	5 ppm 13 mg/m ³

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.

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Respiratory protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. Respirator type: full-face cartridge respirator with acid gas cartridge and N95 filter.

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.

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: solid (powder)

Colour: off-white

Odour: odourless

Specific gravity: no data available

Vapour pressure: negligible

Vapour density: not applicable

Melting point/range: no data available

Water solubility: appreciable

pH: not applicable

Flash point: not applicable

Flammability Limits: Not specified

10. Stability and reactivity

Stability: Stable under normal conditions.

Incompatibility: 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:

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Contains: Hydroquinone. Possible risk of irreversible effects. Limited evidence of a carcinogenic effect.

Contains: Bis(4-hydroxy-N-methylanilinium) sulphate. May cause blood disorders based on animal data.

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: No specific hazard known. May cause transient irritation.

Skin: May cause sensitization by skin contact.

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

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
- Inhalation LC50 (rat): > 5.5 mg/l / 4 hr
- Skin irritation: none
- Eye irritation: slight; washing palliative

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

Acute Toxicity Data:

Oral LD50 (rat): 400 mg/kg

- Oral LD50 (rat): > 375 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

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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

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

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):	1 - 10 mg/l
Toxicity to algae (IC50):	10 - 100 mg/l

Persistence and degradability: Readily biodegradable.

Chemical Oxygen Demand (COD): ca. 260 g/l

Biochemical Oxygen Demand (BOD): ca. 205 g/l

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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.

Poisons Schedule: Not specified

Australian Safety and Compensation Council: none

Other regulations

Australia National Model Regulations for the Control of Scheduled Carcinogenic Substances No components listed

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. The actual label information will depend upon the intended use of the product. Australian Safety and Compensation Council labeling appears for commercial/industrial use.

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Australian Safety and Compensation Council Labeling:

Contains: Sodium sulphite 85 - 90%, Hydroquinone 1 - 5%, Bis(4-hydroxy-N-methylanilinium) sulphate 1 - 5%, Pentetic acid, pentasodium salt 0.1 - <1%



Symbol/Indication of Danger:

Xn: Harmful

Risk Phrases:

R22: Harmful if swallowed.
R40: Limited evidence of a carcinogenic effect.
R68: Possible risk of irreversible effects.
R36: Irritating to eyes.
R43: May cause sensitization by skin contact.
R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S24: Avoid contact with skin.
S36/37: Wear suitable protective clothing and gloves.
S57: Use appropriate container to avoid environmental contamination.

National Health and Medical Research Council Standard for the Uniform Scheduling of Drugs and Poisons Labeling:

CONTAINS NO SCHEDULED POISONS

First aid: No first aid instructions are recommended for labelling purposes.

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-2, S-2, F-0, C-0