

MATERIAL SAFETY DATA SHEET

Revision Date: 06/17/2005
Z17000000221/Version: 1.2
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1. Identification of the substance/preparation and of the company/undertaking

Product name: KODAK FLEXICOLOR Developer Replenisher, Part A

Product code: 1637479 - Part A

Manufacturer: KODAK (Wuxi) Company Limited, 18 Chang Jiang Road, New District, (Wuxi), 214028

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

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

For other information or to request an MSDS, call (800) 242-2424.

Synonyms: PCD 5602

2. Hazards identification

CONTAINS: Potassium sulphite (10117-38-1), Sodium sulphite (7757-83-7), Nitritotriacetic acid, trisodium salt (5064-31-3)

WARNING!
MAY BE HARMFUL IF SWALLOWED.
MAY LIBERATE SULFUR DIOXIDE

HMIS II Hazard Ratings:
Health - 1, Flammability - 0, Reactivity (Stability) - 0

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

NOTE: HMIS II and NFPA 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. An asterisk (*), in the HMIS II health field, designates potential chronic or target organ hazards. To adequately address safe handling, ALL information in this MSDS must be considered.

3. Composition/information on ingredients

Weight %	Components (CAS-No.)
55 - 60	Water (7732-18-5)
25 - 30	Potassium carbonate (584-08-7)
1 - 5	Potassium bicarbonate (298-14-6)
1 - 5	Pentetic acid, pentasodium salt (140-01-2)
1 - 5	Potassium sulphite (10117-38-1)
1 - 5	Sodium sulphite (7757-83-7)
< 0.2	Nitritotriacetic acid, trisodium salt (5064-31-3)

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4. First aid measures

Inhalation: If symptomatic, move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.

Eyes: Any material that contacts the eye should be washed out immediately with water. Get medical attention if symptoms occur.

Skin: Wash off with soap and water. Get medical attention if symptoms occur.

Ingestion: Drink 1-2 glasses of water. Seek medical attention. Never give anything by mouth to an unconscious person.

5. Fire-fighting measures

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 section).

Unusual Fire and Explosion Hazards: None.

6. Accidental release measures

Methods for cleaning up: Flush into sewer with plenty of water. Otherwise, absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

7. Handling and storage

Personal precautions: Avoid breathing mist or vapour. Avoid contact with eyes and prolonged or repeated contact with skin. Use with adequate ventilation. Wash thoroughly after handling.

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
Sulphur dioxide	ACGIH	Time Weighted Average (TWA):	2 ppm
	ACGIH	Short Term Exposure Limit (STEL):	5 ppm
	OSHA Z1	PEL:	5 ppm 13 mg/m3

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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: If engineering controls do not maintain airborne concentrations to an acceptable level, an approved respirator must be worn. 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 OSHA Standard 29 CFR 1910.134.

Eye protection: It is a good industrial hygiene practice to minimize eye contact. Wear safety glasses with side shields (or goggles).

Skin and body protection: It is a good industrial hygiene practice to minimize skin contact. For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.

Recommended Decontamination Facilities: Safety shower, eye wash, washing facilities as appropriate to condition of use.

9. Physical and Chemical Properties

Physical form: liquid

Colour: colourless

Odour: odourless

Specific gravity: 1.40

Vapour pressure: 24 mbar (18.0 mm Hg)

Vapor density (air = 1): 0.6

Volatile fraction by weight: 55 - 60 %

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

Water solubility: complete

pH: 11.2

Flash point: none, noncombustible liquid

10. Stability and reactivity

Stability: Stable.

Incompatibility: Acids. Contact with strong acids liberates sulphur dioxide.

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Hazardous decomposition products: Carbon oxides, sulphur oxides.

Hazardous Polymerization: Hazardous polymerization does not occur.

11. Toxicological information

Effects of Exposure

General advice:

Contains: Nitrilotriacetic acid, trisodium salt. Possible cancer hazard. May cause cancer based on animal data.

Inhalation: Expected to be a low hazard for usual industrial or commercial handling by trained personnel. 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: This material has a low potential to cause allergic skin reactions; however, cases of human skin sensitization have been reported.

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

12. Ecological information

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

Potential Toxicity:

Fish LC50: > 100 mg/l

Daphnid EC50: > 100 mg/l

Algal IC50: Not available

Waste treatment organisms EC50: Not available

Organics Readily Degradable: Not readily biodegradable

Potential Bioaccumulation: $\log Pow < 1$

COD (approximate): 24 g/l

BOD (approximate): 7 g/l

13. Disposal considerations

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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 transportation information regarding this product call the Kodak Worldwide Transportation Hazmat Hot Line: (585) 722-2400 between 8 a.m. and 5 p.m. (Eastern Standard Time), Monday through Friday. In Canada: General Shipping Information, call: (416) 766-8233.

15. Regulatory information

U.S. California Prop. 65: none

Carcinogenicity Classification (components present at 0.1% or more):

International Agency for Research on Cancer (IARC): Sodium sulphite: 3 (Classification not possible from current data.), Sulphur dioxide: 3 (Classification not possible from current data.), Potassium sulphite: 3 (not classifiable as to carcinogenicity to humans), Nitritotriacetic acid, trisodium salt: 2B (possibly carcinogenic to humans)

American Conference of Governmental Industrial Hygienists (ACGIH): Sulphur dioxide: Group A4 (Not classifiable as a human carcinogen.)

U.S. National Toxicology Program (NTP): none

U.S. Occupational Safety and Health Administration (OSHA): none

Chemical(s) subject to the reporting requirements of U.S. Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372: none

16. Other information

US/Canadian Label Statements:

CONTAINS: Potassium sulphite (10117-38-1), Sodium sulphite (7757-83-7), Nitritotriacetic acid, trisodium salt (5064-31-3)

**WARNING!
MAY BE HARMFUL IF SWALLOWED.
MAY LIBERATE SULFUR DIOXIDE**

Avoid breathing mist or vapour.
Avoid contact with eyes and prolonged or repeated contact with skin.
Ensure adequate ventilation.
Wash thoroughly after handling.

FIRST AID: If swallowed, seek medical advice. Never give anything by mouth to an unconscious person.

Keep out of reach of children.

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For additional information, see Material Safety Data Sheet (MSDS) for this material.

Additional hazard precautions for containers greater than 1 gallon of liquid or 5 pounds of solid:

Since emptied containers retain product residue, follow label warnings even after container is emptied.

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-1, F-0, C-0

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

Product name: KODAK FLEXICOLOR Developer Replenisher, Working Solution

Product code: 1637479

Manufacturer: KODAK (Wuxi) Company Limited, 18 Chang Jiang Road, New District, (Wuxi), 214028

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

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

For other information or to request an MSDS, call (800) 242-2424.

Synonyms: None

2. Hazards identification

CONTAINS: 4-(N-ethyl-N-2-hydroxyethyl)-2-methylphenylenediamine sulfate (25646-77-9), Potassium sulphite (10117-38-1), Sodium sulphite (7757-83-7), Bis(hydroxylammonium)sulphate (10039-54-0)

WARNING!

**MAY CAUSE ALLERGIC SKIN REACTION
MAY BE HARMFUL IF SWALLOWED.**

HMIS Hazard Ratings:

Health - 2, Flammability - 0, Reactivity (Stability) - 0

NFPA Hazard Ratings:

Health - 1, Flammability - 0, Reactivity (Stability) - 0

NOTE: HMIS and NFPA 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. An asterisk (*), in the HMIS health field, designates potential chronic or target organ hazards. To adequately address safe handling, ALL information in this MSDS must be considered.

3. Composition/information on ingredients

Weight %	Components (CAS-No.)
90 - 95	Water (7732-18-5)
1 - 5	Potassium carbonate (584-08-7)
< 1	4-(N-ethyl-N-2-hydroxyethyl)-2-methylphenylenediamine sulfate (25646-77-9)
< 1	Sodium bicarbonate (144-55-8)
< 1	Pentetic acid, pentasodium salt (140-01-2)
< 1	Bis(hydroxylammonium)sulphate (10039-54-0)
< 1	Potassium sulphite (10117-38-1)

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< 1

Sodium sulphite (7757-83-7)

4. First aid measures

Inhalation: If symptomatic, move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.

Eyes: Any material that contacts the eye should be washed out immediately with water. Get medical attention if symptoms occur.

Skin: Immediately flush with plenty of water and wash with a non-alkaline (acid) type of skin cleaner. Remove contaminated clothing and shoes. If skin irritation or an allergic skin reaction develops, get medical attention. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Ingestion: Drink 1-2 glasses of water. Seek medical attention. Never give anything by mouth to an unconscious person.

5. Fire-fighting measures

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.

Hazardous Combustion Products: None (noncombustible)

Unusual Fire and Explosion Hazards: None

6. Accidental release measures

Methods for cleaning up: Flush into sewer with plenty of water. Otherwise, absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

7. Handling and storage

Personal precautions: Avoid breathing mist or vapour. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling. The routine use of a nonalkaline (acid) type of hand cleaner and regular cleaning of working surfaces, gloves, etc. will help minimize the possibility of a skin reaction.

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

Storage: Keep container tightly closed.

8. Exposure controls / personal protection

Occupational exposure controls

Chemical Name	Regulatory List	Value Type	Value
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4-(N-ethyl-N-2-hydroxyethyl)-2-methylphenylenediamine sulfate

EK HPG

Time Weighted Average (TWA):

0.1 mg/m3

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions.

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 OSHA Standard 29 CFR 1910.134.

Eye protection: It is a good industrial hygiene practice to minimize eye contact. Wear safety glasses with side shields (or goggles).

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

Recommended Decontamination Facilities: Safety shower, eye wash, washing facilities.

9. Physical and Chemical Properties

Physical form: liquid

Colour: colourless

Odour: odourless

Specific gravity: 1.04

Vapour pressure: 24 mbar (18.0 mm Hg)

Relative vapour density: 0.6

Volatile fraction by weight: 90 - 95 %

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

Water solubility: complete

pH: 10.0

Flash point: none, noncombustible liquid

10. Stability and reactivity

Stability: Stable.

Incompatibility: None with common materials and contaminants with which the material may reasonably come into contact.

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Hazardous decomposition products: None under normal conditions of use.

Hazardous Polymerization: Hazardous polymerisation does not occur.

11. Toxicological information

Effects of Exposure

Inhalation: Expected to be a low hazard for usual industrial or commercial handling by trained personnel. 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 allergic skin reaction.

Ingestion: May be harmful if swallowed. 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.

12. Ecological information

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

Potential Toxicity:

Fish LC50: 10 - 100 mg/l

Daphnid EC50: > 100 mg/l

Algal IC50: > 100 mg/l

Waste treatment organisms EC50: > 100 mg/l

Organics Readily Degradable: Not readily biodegradable.

Potential Bioaccumulation: $\log Pow < 1$

COD (approximate): 10 g/l

BOD (approximate): 1 g/l

13. Disposal considerations

Discharge, treatment, or disposal is subject to national, state, provincial, or municipal laws. Consult state or local regulatory authorities before flushing to sewer with large amounts of water. Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

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15. Regulatory information

U.S. California Prop. 65: none

Carcinogenicity Classification (components present at 0.1% or more):

International Agency for Research on Cancer (IARC): Sodium sulphite: 3 (not classifiable as to carcinogenicity to humans), Potassium sulphite: 3 (not classifiable as to carcinogenicity to humans)
American Conference of Governmental Industrial Hygienists (ACGIH): none
U.S. National Toxicology Program (NTP): none
U.S. Occupational Safety and Health Administration (OSHA): none

Chemical(s) subject to the reporting requirements of U.S. Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372: none

16. Other information

US/Canadian Label Statements:

CONTAINS: 4-(N-ethyl-N-2-hydroxyethyl)-2-methylphenylenediamine sulfate (25646-77-9), Potassium sulphite (10117-38-1), Sodium sulphite (7757-83-7), Bis(hydroxylammonium)sulphate (10039-54-0)

WARNING!
MAY CAUSE ALLERGIC SKIN REACTION
MAY BE HARMFUL IF SWALLOWED.

Avoid breathing mist or vapour.
Avoid contact with eyes, skin, and clothing.
Wash thoroughly after handling.
Use with adequate ventilation.

FIRST AID: If swallowed, seek medical advice. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes and 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 reuse. Destroy or thoroughly clean contaminated shoes.

Keep out of reach of children.

For additional information, see Material Safety Data Sheet (MSDS) for this material.

Additional hazard precautions for containers greater than 1 gallon of liquid or 5 pounds of solid:

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