

MATERIAL SAFETY DATA SHEET

200000589/F/USA - D-0017.000J

Approval Date: 02/04/1998

Print Date: 02/07/1998

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: KODAK Rapid Access Dental Twin Pack, Part Fixer

Catalog Number(s): 183 8374 - 16 fluid ounce(s), Ready-To-Use
871 9981 - 16 fluid ounce(s), Ready-To-Use (JAPAN)

Manufacturer/Supplier: EASTMAN KODAK COMPANY, Rochester, New York 14650

For Emergency Health, Safety & Environmental Information, call (716) 722-5151

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

Synonym(s): KAN 441601; PCD 5273; D-0017.000

2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry No.)

60-65	Water (007732-18-5)
25-30	Ammonium thiocyanate (001762-95-4)
10-15	Ammonium thiosulfate (007783-18-8)
< 1	Sodium bisulfite (007631-90-5)
< 1	Ammonium bisulfite (010192-30-0)

3. HAZARDS IDENTIFICATION

CONTAINS: Ammonium thiocyanate (001762-95-4); sodium bisulfite (007631-90-5);
ammonium bisulfite (010192-30-0)

WARNING!

CONTACT WITH STRONG OXIDIZER OR ACID LIBERATES POISONOUS AND FLAMMABLE GAS
CAN CAUSE THYROID DAMAGE

CAUSES SKIN AND EYE IRRITATION

HARMFUL IF ABSORBED THROUGH SKIN OR SWALLOWED

HMIS Hazard Ratings:

Health - 2 , Flammability - 1, Reactivity - 0, Personal Protection - C

NFPA Hazard Ratings:

Health - 1, Flammability - 1, 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. The personal protection index is only intended for general guidance on personal protection equipment (PPE) that is suitable for the potential hazards of the material. PPE (e.g., respirators) may not be needed if engineering controls (e.g., local

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Prevention of Fire and Explosion: No special precautionary measures should be needed under anticipated conditions of use.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

ACGIH Threshold Limit Value (TLV):

Hydroquinone: 2 mg/m³ TWA

Sodium tetraborate, pentahydrate: 1 mg/m³ TWA

OSHA (USA) Permissible Exposure Limit (PEL - 1971 Table Z-1 Values):

Hydroquinone: 2 mg/m³ TWA

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: Wear safety glasses with side shields (or goggles).

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

Recommended Decontamination Facilities: Eye bath, safety shower, washing facilities

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid

Color: Slight yellow

Odor: Slight benzyl alcohol

Specific Gravity (water = 1): 1.12

Vapor Pressure at 20 C (68 F): 24 mbar (18 mm Hg)

Vapor Density (Air = 1): 0.6

Volatile Fraction by Weight: 80-85%

Boiling Point: >100 C (>212 F)

Solubility in Water: Complete

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pH: 12.2

Flash Point: None, noncombustible liquid

10. STABILITY AND REACTIVITY

Stability: Stable

Incompatibility: Acids

Hazardous Decomposition Products: Sulfur dioxide, carbon dioxide, carbon monoxide

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Effects of Exposure:

General: In F-344 rats, chronic oral administration of hydroquinone has resulted in the formation of benign kidney tumors thought to be secondary to nephropathy. Hydroquinone-induced nephropathy following oral administration has been noted in the male F-344 rat, but not in other species or rat strains tested. Although an increase in mononuclear cell leukemia in F-344 female rats has been reported following chronic oral administration of hydroquinone, this finding was not reproduced in a subsequent study. There was no evidence of carcinogenicity in male mice following chronic oral administration of hydroquinone; some evidence of carcinogenic activity was shown in female mice by an increase in hepatocellular neoplasms which were primarily benign adenomas, although this finding was not reproduced in a subsequent study. No skin tumors were reported in mice following long-term dermal application of hydroquinone. Therefore, neoplastic responses have not been consistent across route of exposure, species, or sex. 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 the chromosomal effects in test animals in predicting human risk is unclear.

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

Eyes: Causes irritation.

Skin: Prolonged or repeated contact with aqueous solutions may cause irritation. May cause skin depigmentation. May cause allergic skin reaction based on human experience.

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Ingestion: 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

Introduction: This environmental effects summary is written to assist in addressing emergencies created by an accidental spill which might occur during the shipment of this material, and, in general, it is not meant to address discharges to sanitary sewers or publically owned treatment works.

Summary: Data for the major components of this material have been used to estimate the environmental impact of this material. This material is a strongly alkaline aqueous solution, and this property may cause adverse environmental effects. However, this material, itself, has not been tested for environmental effects.

It is expected to have the following properties: a moderate biochemical oxygen demand and may cause oxygen depletion in aqueous systems, a high potential to affect some aquatic organisms, a moderate potential to affect secondary waste treatment microbial metabolism, a low potential to persist in the environment, a low potential to bioconcentrate. After dilution with a large amount of water, followed by secondary waste treatment, this material is not expected to cause adverse environmental effects.

13. DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or local laws. Flush to sewer with large amounts of water.

14. TRANSPORT INFORMATION

For transportation information regarding this product call the Kodak Worldwide Transportation Hazmat Hot Line: (716) 722-2400 between 8 a.m. and 5 p.m. (Eastern Standard Time), Monday through Friday.

15. REGULATORY INFORMATION

Material(s) known to the State of California to cause cancer: None
Material(s) known to the State of California to cause adverse reproductive effects: None

Carcinogenicity Classification (components present at 0.1% or more):
International Agency for Research on Cancer (IARC): None
American Conference of Governmental Industrial Hygienists (ACGIH): None

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National Toxicology Program (NTP): None
Occupational Safety and Health Administration (OSHA): None

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372: Hydroquinone

16. OTHER INFORMATION

US/Canadian Label Statements:

CONTAINS: Hydroquinone (000123-31-9), potassium sulfite (010117-38-1)

WARNING!

HARMFUL IF SWALLOWED

CAUSES EYE IRRITATION

MAY CAUSE ALLERGIC SKIN REACTION

Avoid breathing mist or vapor.

Avoid contact with eyes, skin, and clothing.

Use with adequate ventilation.

Wash thoroughly after handling.

FIRST AID: 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 center immediately. 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.

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.

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ventilation) are adequate. 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.

4. FIRST-AID MEASURES

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

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

Skin: Immediately flush 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.

Ingestion: Induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

WARNING! Contact with a strong oxidizer or acid may liberate hydrogen cyanide gas.

In the event that hydrogen cyanide gas is released, the local emergency ambulance/resuscitation service or physician should be informed that the patient may have been exposed to hydrogen cyanide gas.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Water spray, carbon dioxide (CO₂), dry chemical, alcohol foam

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 dioxide, carbon monoxide, oxides of nitrogen, oxides of sulfur (see also Hazardous Decomposition Products section)

Unusual Fire and Explosion Hazards: None

6. ACCIDENTAL RELEASE MEASURES

Flush to sewer with large amounts of water. Otherwise, absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination.

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7. HANDLING AND STORAGE

Personal Precautionary Measures: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling. If accidentally mixed with a strong oxidizer or acid, do not breathe gas.

Cleaning Precautions: DO NOT add cleaning agents to processor tanks unless the tank and recirculation lines have been completely drained and thoroughly rinsed with water. The addition of concentrated cleaning agents, e.g. chlorine containing bleaches, to control biological growth or clean tanks may liberate poisonous gases. For information on the recommended methods for cleaning processing tanks, contact the Kodak Customer Assistance Center at (800) 242-2424, extension 60. For information on controlling biological growth, request a copy of the KODAK Publication CIS-3, Biocides for Photographic Solution Tanks and Wash Water.

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

Exposure Limits:

ACGIH Threshold Limit Value (TLV):

Sodium bisulfite: 5 mg/m³ TWA

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. 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 under normal conditions of use. However in the unlikely event that hazardous decomposition products are released, emergency response personnel must wear a full-face positive-pressure air supplied respirator. 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: Wear safety glasses with side shields (or goggles).

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

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Recommended Decontamination Facilities: Eye bath, safety shower, washing facilities

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid

Color: Colorless

Odor: Odorless

Specific Gravity (water = 1): 1.12

Vapor Pressure at 20 C (68 F): 22 mbar (16.7 mm Hg)

Vapor Density (Air = 1): 0.4

Volatile Fraction by Weight: 60-65 %

Boiling Point: >100 C (>212 F)

Solubility in Water: Complete

pH: 5.4

Flash Point: None

10. STABILITY AND REACTIVITY

Stability: Stable

Incompatibility: Strong oxidizing agents, sodium hypochlorite (bleach), strong acids, (e.g. sulfuric acid), bases. Contact with strong oxidizing agents or acids liberates poisonous gas. Contact with strong oxidizing agents or acids liberates flammable material. Contact with base liberates flammable material.

Hazardous Decomposition Products: Ammonia, chloramine, cyanides, carbonyl sulfide

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Effects of Exposure:

General: Overexposure to thiocyanates has been shown to cause thyroid enlargement, decrease in metabolic rate, and symptoms of hypothyroidism in humans and animals.

Inhalation: Expected to be a low hazard for recommended handling. If hydrogen cyanide gas is liberated due to contact with a strong oxidizer or acid, it may cause dizziness, headache, rapid respiration, rapid pulse, unconsciousness, convulsions and death. In contact with strong acids or if heated, sulfites may liberate sulfur dioxide gas. Sulfur dioxide gas is irritating to the respiratory tract. Some asthmatics or hypersensitive individuals may experience difficult breathing.

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Eyes: Causes irritation.

Skin: Causes irritation. Harmful if absorbed through skin. This material has a low potential to cause allergic skin reactions; however, cases of human skin sensitization have been reported.

Ingestion: 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

Introduction: This environmental effects summary is written to assist in addressing emergencies created by an accidental spill which might occur during the shipment of this material, and, in general, it is not meant to address discharges to sanitary sewers or publically owned treatment works.

Summary: Data for the major components of this material have been used to estimate the environmental impact of this material. This material is a moderately acidic aqueous solution, and this property may cause adverse environmental effects. However, this material, itself, has not been tested for environmental effects.

It is expected to have the following properties: a moderate biochemical oxygen demand and may cause oxygen depletion in aqueous systems, a low potential to affect aquatic organisms, a low potential to affect secondary waste treatment microbial metabolism, a low potential to affect the germination and/or early growth of some plants, a low potential to persist in the environment, a low potential to bioconcentrate. When diluted with a large amount of water, this material released directly or indirectly into the environment is not expected to have a significant impact.

13. DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or local laws. Flush to sewer with large amounts of water.

14. TRANSPORT INFORMATION

For transportation information regarding this product call the Kodak Worldwide Transportation Hazmat Hot Line: (716) 722-2400 between 8 a.m. and 5 p.m. (Eastern Standard Time), Monday through Friday.

15. REGULATORY INFORMATION

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Material(s) known to the State of California to cause cancer: None
Material(s) known to the State of California to cause adverse reproductive effects: None

Carcinogenicity Classification (components present at 0.1% or more):
International Agency for Research on Cancer (IARC): None
American Conference of Governmental Industrial Hygienists (ACGIH): None
National Toxicology Program (NTP): None
Occupational Safety and Health Administration (OSHA): None

Chemical(s) subject to the reporting requirements of 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: Ammonium thiocyanate (001762-95-4); sodium bisulfite (007631-90-5); ammonium bisulfite (010192-30-0)

WARNING!

CONTACT WITH STRONG OXIDIZER OR ACID LIBERATES POISONOUS AND FLAMMABLE GAS
CAN CAUSE THYROID DAMAGE

HARMFUL IF ABSORBED THROUGH SKIN OR SWALLOWED

CAUSES SKIN AND EYE IRRITATION

Avoid contact with eyes, skin, and clothing.

Keep container closed.

If accidentally mixed with a strong oxidizer or acid, do not breathe gas.

Use with adequate ventilation.

Wash thoroughly after handling.

FIRST AID: If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. 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.

Do not handle or use until safety precautions in Material Safety Data Sheet (MSDS) have been read and understood

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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.

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: KODAK Rapid Access Dental Twin Pack, Part Developer

Catalog Number(s): 183 8374 - 16 fluid ounce(s), Ready-To-Use
871 9981 - 16 fluid ounce(s), Ready-To-Use (JAPAN)

Manufacturer/Supplier: EASTMAN KODAK COMPANY, Rochester, New York 14650

For Emergency Health, Safety & Environmental Information, call (716) 722-5151

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

Synonym(s): KAN 428045; PCD 5044; C-0112.370

2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry No.)

80-85	Water (007732-18-5)
5-10	Potassium sulfite (010117-38-1)
6	Hydroquinone (000123-31-9)
< 1	Sodium tetraborate, pentahydrate (012179-04-3)
< 1	Versenex 80 Chelating Agent (not available)
< 0.1	Potassium hydroxide (001310-58-3)

3. HAZARDS IDENTIFICATION

CONTAINS: Hydroquinone (000123-31-9), potassium sulfite (010117-38-1)

WARNING!

HARMFUL IF SWALLOWED

CAUSES EYE IRRITATION

MAY CAUSE ALLERGIC SKIN REACTION

HMIS Hazard Ratings:

Health - 2 , Flammability - 0, Reactivity - 0, Personal Protection - C

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. The personal protection index is only intended for general guidance on personal protection equipment (PPE) that is suitable for the potential hazards of the material. PPE (e.g., respirators) may not be needed if engineering controls (e.g., local ventilation) are adequate. An asterisk (*), in the HMIS health field,

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designates potential chronic or target organ hazards. To adequately address safe handling, ALL information in this MSDS must be considered.

4. FIRST-AID MEASURES

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

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

Skin: Immediately flush with plenty of water for at least 15 minutes while removing 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: Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use appropriate agent for adjacent fire.

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

Flush to sewer with large amounts of water. Otherwise, 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 Precautionary Measures: Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling.