



# KODAK GBX Developer and Replenisher

## MATERIAL SAFETY DATA SHEET

200000317/F/USA  
Approval Date: 02/04/2001  
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### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: KODAK GBX Developer and Replenisher

Catalog Number(s):        190 0943 - To Make 1 gallon (U.S.)  
                                  190 1859 - Kit(s), To Make 1 gallon (U.S.)  
                                  803 4001 - To Make 1 gallon (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):     Concentrate: KAN 427847; PCD 4861; C-0070.050  
                                  Working solution: KAN 966184

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### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry No.)

Concentrate:

60-65	Water (007732-18-5)
5-10	Potassium sulfite (010117-38-1)
5-10	Diethylene glycol (000111-46-6)
5-10	Sodium sulfite (007757-83-7)
6	Hydroquinone (000123-31-9)
1-5	Potassium carbonate (000584-08-7)
< 1	4-hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidinone (013047-13-7)

Working solution:

90-95	Water (007732-18-5)
1-5	Potassium sulfite (010117-38-1)
1-5	Diethylene glycol (000111-46-6)
1-5	Sodium sulfite (007757-83-7)

1-5 Hydroquinone (000123-31-9)

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### 3. HAZARDS IDENTIFICATION

#### Concentrate:

CONTAINS: Hydroquinone (000123-31-9); Diethylene glycol (000111-46-6); Potassium sulfite (010117-38-1); Sodium sulfite (007757-83-7); 4-hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidinone (013047-13-7)

#### WARNING!

HARMFUL IF SWALLOWED  
CAUSES EYE IRRITATION  
CAN CAUSE KIDNEY DAMAGE  
CAN CAUSE CNS EFFECTS  
MAY CAUSE ALLERGIC SKIN REACTION

#### HMIS Hazard Ratings:

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

#### NFPA Hazard Ratings:

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

#### Working solution:

CONTAINS: Hydroquinone (000123-31-9); Diethylene glycol (000111-46-6); Potassium sulfite (010117-38-1); Sodium sulfite (007757-83-7)

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

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### 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.

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.

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## 5. FIRE FIGHTING MEASURES

### Extinguishing Media:

Concentrate: Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol foam

Working solution: 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:

Concentrate: Carbon dioxide, carbon monoxide, oxides of sulfur (see also Hazardous Decomposition Products section)

Working solution: None (noncombustible) (see also Hazardous Decomposition Products section)

Unusual Fire and Explosion Hazards: None

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

### Prevention of Fire and Explosion:

Concentrate: Keep from contact with oxidizing materials.

Working solution: No special precautionary measures should be needed under anticipated conditions of use.

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

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limits:

ACGIH Threshold Limit Value (TLV):

Hydroquinone: 2 mg/m<sup>3</sup> TWA

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

Hydroquinone: 2 mg/m<sup>3</sup> TWA

AIHA Workplace Environmental Exposure Level (WEEL):

Diethylene glycol: 10 mg/m<sup>3</sup>, 8 hr TWA (aerosol)

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 such as poorly ventilated spaces, evaporation from large surfaces, spraying, heating, etc.

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, washing facilities, safety shower

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid

Color:

Concentrate: Slight yellow

Working solution: Colorless

Odor: Odorless

Specific Gravity (water = 1):

Concentrate: 1.230

Working solution: 1.0283

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

Vapor Density (Air = 1): 0.6

Volatile Fraction by Weight:

Concentrate: 65 %

Working solution: 90 %

Boiling Point: >100°C (>212°F)

Solubility in Water: Complete

pH:

Concentrate: 10.2

Working solution: 9.85-10.05

Flash Point:

Concentrate: None

Working solution: None, noncombustible liquid

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## 10. STABILITY AND REACTIVITY

Stability: Stable

Incompatibility:

Concentrate: Strong oxidizing agents, strong acids

Working solution: Strong acids

Hazardous Decomposition Products: Sulfur dioxide

Hazardous Polymerization: Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

Effects of Exposure:

General:

Contains diethylene glycol. Can cause CNS effects. Can cause kidney damage.

Contains hydroquinone. 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.

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.

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## 12. ECOLOGICAL INFORMATION

The following properties are ESTIMATED from the components of the preparations. The effects of hydroquinone are considered the most significant in this estimation:

	Concentrate	Working Solution
Potential Toxicity		
Fish LC50 mg/l:	1-10	1-10
Daphnid EC50 mg/l:	<1	1-10
Algal IC50 mg/l:	10-100	10-100
Organics Readily Degradable (>70%):	Yes (14 days)	Yes (14 days)
Potential Bioaccumulation:	Log Pow <1	Log Pow <1
COD (approximate g/l):	340	79
BOD5 (approximate g/l):	121	30
Potential Toxicity Waste treatment microorganisms EC50 (mg/l):	>100	>100

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## 13. DISPOSAL CONSIDERATIONS

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

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## 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.

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## 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): Hydroquinone, Group 3; not classifiable.

American Conference of Governmental Industrial Hygienists (ACGIH): Hydroquinone, A3; Confirmed animal carcinogen with unknown relevance to humans.

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

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## 16. OTHER INFORMATION

US/Canadian Label Statements:

Concentrate:

CONTAINS: Hydroquinone (000123-31-9); Diethylene glycol (000111-46-6); Potassium sulfite (010117-38-1); Sodium sulfite (007757-83-7); 4-hydroxymethyl-4-methyl-1-phenyl-3-pyrazolidinone (013047-13-7)

WARNING!

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CAN CAUSE CNS EFFECTS

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. 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:

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

IN CASE OF FIRE: Use water spray, carbon dioxide (CO<sub>2</sub>), dry chemical,

alcohol foam

IN CASE OF SPILL: Absorb spill with inert material, then place in a chemical waste container. Flush residual spill or area with water. For large spills, dike for later disposal. Prevent runoff from entering drains, sewers, and streams.

Working solution:

CONTAINS: Hydroquinone (000123-31-9); Diethylene glycol (000111-46-6); Potassium sulfite (010117-38-1); Sodium sulfite (007757-83-7)

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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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Concentrate:R-1, S-2, F-1, C-0  
WS:R-1, S-2, F-0, C-0





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