

Material Safety Data Sheet

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

Product name: Kodak GBX TWIN PACK Developer and Fixer, Fixer Working Solution

Product code: 1901859, Fixer Working Solution

Supplier: Carestream Health, Inc., 150 Verona Street, Rochester, New York, 14608

For Emergency Health Information call, (800) 424-9300

For other information contact 800-328-2910.

Synonyms: None.

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

2. Hazards identification

CONTAINS: Ammonium thiosulphate (7783-18-8), Sodium bisulphite (7631-90-5), Ammonium sulphite (10196-04-0)

WARNING!

MAY BE HARMFUL IF SWALLOWED.

DRIED PRODUCT RESIDUE CAN ACT AS A REDUCING AGENT.

HMIS III Hazard Ratings: Health - 1, Flammability - 1, Physical Hazard - 0

NFPA Hazard Ratings: Health - 3, Flammability - 1, Instability - 0

NOTE: HMIS III 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 III 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.)
10 - 15	Ammonium thiosulphate (7783-18-8)
1 - 5	Sodium bisulphite (7631-90-5)
0.1 - 1	Ammonium sulphite (10196-04-0)
0.1 - < 1	Boric acid (10043-35-3)

4. First aid measures

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

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Eyes: Any material that contacts the eye should be washed out immediately with water. Get medical attention if symptoms occur. If easy to do, remove contact lens, if worn.

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

Ingestion: 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 centre immediately.

5. Fire-fighting measures

Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Flush with plenty of water.

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 oxides, nitrogen oxides (NOx), Sulphur oxides, (see also Hazardous Decomposition Products section).

Unusual Fire and Explosion Hazards: Dried product residue can act as a reducing agent. Reacts violently with oxidizing materials. May cause spontaneous heating and ignition when absorbed on combustible, porous material (e.g. rags, paper, sawdust, cotton, clothing).

6. Accidental release measures

Methods for cleaning up: Absorb spill with inert material, then place in a chemical waste container. Clean surface thoroughly to remove residual contamination. Collect in a noncombustible container for prompt disposal.

For Large Spills: Flush with plenty of water.

7. Handling and storage

Personal precautions: Avoid breathing mist or vapour at concentrations greater than the exposure limits. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

Prevention of Fire and Explosion: Keep from contact with oxidizing materials, highly oxygenated or halogenated solvents, organic compounds containing reducible functional groups. Remove and wash contaminated clothing promptly.

Storage: Store in original container. Keep container tightly closed to prevent the loss of water. Keep away from incompatible substances (see Incompatibility section.)

8. Exposure controls/personal protection

Occupational exposure controls

Chemical Name	Regulatory List	Value Type	Value
Sodium bisulphite	ACGIH	time weighted average	5 mg/m ³

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Sulphur dioxide	ACGIH	time weighted average	2 ppm
	ACGIH	Short term exposure limit	5 ppm
	OSHA Z1	Permissible exposure limit	5 ppm 13 mg/m3

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: None should be needed. If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. Respirator type: Acid gas/N95 Particulate 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).

Skin and body protection: 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: ammonia

Specific gravity: > 1.00

Vapour pressure: 24 mbar (18.0 mm Hg)

Vapour density: 0.6

Volatile fraction by weight: 85 - 90 %

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

Water solubility: complete

pH: 4.8 - 5.0

Flash point: None.

10. Stability and reactivity

Stability: Stable under normal conditions.

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Incompatibility: Acids, Strong bases, sodium hypochlorite (bleach), Halogenated compounds, Oxidizing agents. Contact with sodium hypochlorite (bleach) may form chloramine (toxic gas). Contact with strong acids liberates sulphur dioxide.

Hazardous decomposition products: Ammonia, chloramine, Sulphur oxides, nitrogen oxides (NOx).

Hazardous Polymerization: Hazardous polymerisation does not occur.

11. Toxicological information

Effects of Exposure

General advice:

Contains: Boric acid. Based on repeated-dose ingestion studies in animals, may cause adverse reproductive and developmental effects. However, high doses to humans handling this material are not expected since oral consumption is not a likely route of significant exposure.

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: 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.

Data for Ammonium thiosulphate (CAS 7783-18-8):

Acute Toxicity Data:

- Oral LD50 (male rat): 500 - 5,000 mg/kg

Data for Sodium bisulphite (CAS 7631-90-5):

Acute Toxicity Data:

- Oral LD50 (rat): > 1,600 mg/kg
- Skin irritation: No skin irritation
- Eye irritation: No eye irritation

Data for Ammonium sulphite (CAS 10196-04-0):

Acute Toxicity Data:

- Oral LD50 (rat): 2,528 mg/kg
- Oral LD50: 1,904 mg/kg
- Oral LD50 (rat): 2,500 mg/kg (10% in water)
- Oral LD50 (mouse): 1,900 mg/kg (10% in water)

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- Inhalation LC50 (rat): > 2.46 mg/l / 6 hr
- Dermal LD50: > 1,000 mg/kg
- Skin irritation: slight

Data for Boric acid (CAS 10043-35-3):

Acute Toxicity Data:

- Oral LD50 (rat): > 1,600 mg/kg

12. Ecological information

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

Potential Toxicity:

Toxicity to fish (LC50):	> 100 mg/l
Toxicity to daphnia (EC50):	> 100 mg/l
Toxicity to algae (IC50):	10 - 100 mg/l
Toxicity to other organisms:	> 100 mg/l

Persistence and degradability: Readily biodegradable.

Chemical Oxygen Demand (COD): ca. 58 g/l

Biochemical Oxygen Demand (BOD): ca. 47 g/l

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: <http://ship.carestreamhealth.com>.

15. Regulatory information

Notification status

Regulatory List	Notification status	Other information	Not listed
EINECS	y (positive listing)	-	
TSCA	y (positive listing)	On TSCA Inventory	

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AICS	y (positive listing)	-	
DSL	y (positive listing)	-	All components of this product are on the Canadian DSL list.
ENCS (JP)	n (Negative listing)	-	Ammonium thiosulphate
KECI (KR)	y (positive listing)	-	
PICCS (PH)	y (positive listing)	-	
INV (CN)	y (positive listing)	-	

A N (Negative listing) indicates one or more component is either not on the public Inventory or is subject to exemption requirements. If additional information is needed contact Carestream Health.

Other regulations

American Conference of Governmental Industrial Hygienists (ACGIH):	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
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.
California Prop. 65:	none
US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:	Ammonium thiosulphate
US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323):	Water, Ammonium thiosulphate
US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000):	Ammonium thiosulphate
US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5):	Water, Ammonium thiosulphate, Sodium acetate, Sodium bisulphite

16. Other information

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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:

CONTAINS: Ammonium thiosulphate (7783-18-8), Sodium bisulphite (7631-90-5), Ammonium sulphite (10196-04-0)

WARNING!

MAY BE HARMFUL IF SWALLOWED.

DRIED PRODUCT RESIDUE CAN ACT AS A REDUCING AGENT.

Keep container tightly closed to prevent the loss of water.

Avoid breathing mist or vapour at concentrations greater than the exposure limits.

Avoid contact with eyes, skin, and clothing.

Use only with adequate ventilation.

Wash thoroughly after handling.

Keep from contact with clothing and other materials. Remove and wash contaminated clothing promptly.

FIRST AID: If symptomatic, move to fresh air. Any material that contacts the eye should be washed out immediately with water. Wash off with soap and water. Get medical attention if symptoms occur. 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 centre immediately.

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 water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Flush with plenty of water.

IN CASE OF SPILL: Absorb spill with inert material, then place in a chemical waste container. Clean surface thoroughly to remove residual contamination. Collect in a noncombustible container for prompt disposal. For Large Spills: Flush with plenty of water.

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.

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