

MATERIAL SAFETY DATA SHEET

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: KODAK RP X-OMAT LO fixer and replenisher

Catalog Number(s): 861 2392 - To Make 2,400 gallon (U.S.) - Part A & B  
886 8804 - To Make 10 gallons (U.S.) - Part A & B  
858 6141 - To Make 10 gallons (JAPAN) - Part A & B  
184 9041 - To Make 300 gallons (U.S.) - Part A & B

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): Part A: KAN 966702; PCD 5961; D-0028.810  
Part B: CIN 10082101; PCD 6166  
Working solution: KAN 966704; D-0028.815

2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry No.)

Part A:

45-50 Water (007732-18-5)  
35-40 Ammonium thiosulfate (007783-18-8)  
1-5 Sodium thiosulfate (007772-98-7)  
1-5 Acetic acid (000064-19-7)  
1-5 Ammonium bisulfite (010192-30-0)  
< 1 Sodium bisulfite (007631-90-5)

Part B:

85-90 Water (007732-18-5)  
10-15 Aluminum sulfate (010043-01-3)  
< .1 Isothiazolin derivatives (not available)

Working solution:

80-85 Water (007732-18-5)  
10-15 Ammonium thiosulfate (007783-18-8)  
1-5 Sodium thiosulfate (007772-98-7)  
< 1 Acetic acid (000064-19-7)  
< 1 Ammonium bisulfite (010192-30-0)  
< 1 Sodium bisulfite (007631-90-5)

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DRIED PRODUCT RESIDUE CAN ACT AS A REDUCING AGENT. DRYING ON CLOTHING OR OTHER MATERIALS MAY CAUSE FIRE.

Keep container tightly closed to prevent the loss of water.  
Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly.  
Avoid breathing mist or vapor.  
Avoid contact with eyes and prolonged or repeated contact with skin.  
Use with 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.

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

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

IN CASE OF FIRE: Flood with water.

Part B:

CONTAINS: Isothiazolin derivatives; Aluminum sulfate (010043-01-3)

WARNING!

HARMFUL IF SWALLOWED

CAUSES SKIN AND EYE IRRITATION

MAY CAUSE ALLERGIC SKIN REACTION

Avoid prolonged or repeated breathing of vapor.  
Avoid contact with eyes, skin, and clothing.  
Use with adequate ventilation.  
Wash thoroughly after handling.

FIRST AID: In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. In case of skin contact, immediately wash with soap and plenty of water. Get medical attention if symptoms occur. Remove contaminated clothing and shoes. 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.

Working solution:

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Contains: Ammonium bisulfite (010192-30-0); Sodium bisulfite  
(007631-90-5); Ammonium thiosulfate (007783-18-8)

WARNING!

MAY BE HARMFUL IF SWALLOWED

Keep container tightly closed to prevent the loss of water.  
Avoid breathing mist or vapor.  
Avoid contact with eyes and prolonged or repeated contact with skin.  
Use with 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.

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

IN CASE OF FIRE: Use water spray; carbon dioxide (CO2); dry chemical;  
alcohol foam.

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

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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. 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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A:R-1, S-1, F-1, C-1  
B:R-1, S-2, F-0, C-0  
WS:R-1, S-1, F-1, C-0

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3. HAZARDS IDENTIFICATION

Part A:

CONTAINS: Ammonium bisulfite (010192-30-0); Sodium bisulfite (007631-90-5);  
Ammonium thiosulfate (007783-18-8)

CAUTION!

MAY BE HARMFUL IF SWALLOWED

DRIED PRODUCT RESIDUE CAN ACT AS A REDUCING AGENT. DRYING ON CLOTHING OR  
OTHER MATERIALS MAY CAUSE FIRE.

HMIS Hazard Ratings:

Health - 1 , Flammability - 1, Reactivity - 0, Personal Protection - B

NFPA Hazard Ratings:

Health - 2, Flammability - 1, Reactivity (Stability) - 0

Part B:

CONTAINS: Isothiazolin derivatives (not available); Aluminum sulfate  
(010043-01-3)

WARNING!

MAY BE HARMFUL IF SWALLOWED

CAUSES SKIN AND EYE IRRITATION

MAY CAUSE ALLERGIC SKIN REACTION

HMIS Hazard Ratings:

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

NFPA Hazard Ratings:

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

Working solution:

CONTAINS: Ammonium bisulfite (010192-30-0); Sodium bisulfite (007631-90-5);  
Ammonium thiosulfate (007783-18-8)

WARNING!

MAY BE HARMFUL IF SWALLOWED

HMIS Hazard Ratings:

Health - 1 , Flammability - 1, Reactivity - 0, Personal Protection - B

NFPA Hazard Ratings:

Health - 2, 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

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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: Move to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

##### Eyes:

Part A & Working solution: Any material that contacts the eye should be washed out immediately with water. Get medical attention if symptoms occur.

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

##### Skin:

Part A & Working solution: Wash with soap and water. Get medical attention if symptoms occur. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Part B: Immediately remove contaminated clothing and shoes and wash with soap and plenty of water. 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.  
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#### 5. FIRE FIGHTING MEASURES

##### Extinguishing Media:

Part A: Flood with water.

Part B: Use appropriate agent for adjacent fire.

Working solution: Use Water spray; Carbon dioxide (CO<sub>2</sub>); Dry chemical; Alcohol foam.

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

Hazardous Combustion Products:

Part A & Working solution: Oxides of nitrogen, Oxides of sulfur. (see also Hazardous Decomposition Products section).

Part B: None (noncombustible). (see also Hazardous Decomposition Products section).

Unusual Fire and Explosion Hazards:

Part A & Working solution: Solution contains a strong reducing agent. Dried product residue can act as a reducing agent.

Part B: None

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6. ACCIDENTAL RELEASE MEASURES

Part A: Collect in a noncombustible container for prompt disposal.

Part B & Working solution: 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:

Part A & Working solution: Avoid breathing mist or vapor. Avoid contact with eyes and prolonged or repeated contact with skin. Use with adequate ventilation. Wash thoroughly after handling.

Part B: Avoid prolonged or repeated breathing of vapor. Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion:

Part A: Keep away from combustible material. Remove and wash contaminated clothing promptly. Keep from contact with oxidizing materials, highly oxygenated or halogenated solvents, organic compounds containing reducible functional groups.

Part B: No special precautionary measures should be needed under anticipated

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conditions of use.

Working solution: Keep from contact with oxidizing materials, highly oxygenated or halogenated solvents, organic compounds containing reducible functional groups.

Storage:

Part A: Keep container tightly closed to prevent the loss of water. Keep away from incompatible substances (see Incompatibility section). Do not store or ship together with combustible material. Store in original container.

Part B: Keep container closed.

Working solution: Keep container tightly closed to prevent the loss of water. Keep away from incompatible substances (see Incompatibility section).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

ACGIH Threshold Limit Value (TLV):

Acetic acid: 25 mg/m<sup>3</sup> TWA; 37 mg/m<sup>3</sup> STEL

Aluminum sulfate: 2 mg/m<sup>3</sup> TWA

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

Acetic acid: 25 mg/m<sup>3</sup> TWA

Aluminum sulfate: 2 mg/m<sup>3</sup> TWA

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

Respiratory Protection:

Part A & Working solution: 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.

Part B: None should be needed.

Eye Protection:

Part A & Working solution: It is a good industrial hygiene practice to minimize eye contact. Wear safety glasses with side shields (or goggles).

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

Skin Protection:

Part A & Working solution: 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.

Part B: Wear impervious gloves and protective clothing appropriate for the risk of exposure. The following gloves have been shown to be impervious under the indicated conditions: Butyl rubber; Nitrile rubber.

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

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9. PHYSICAL AND CHEMICAL PROPERTIES

	Part A	Part B	Working solution
Physical Form:	liquid	liquid	liquid
Color:	light green	colorless	colorless
Odor:	vinegar	odorless	odorless
Density:	1.29	1.11	1.087
Vapor Pressure at 20 C (68 F):	24 mbar (18 mm Hg)	24 mbar (18 mm Hg)	24 mbar (18 mm Hg)
Vapor Density (Air = 1):	0.6	0.6	0.6
Volatile Fraction by Weight:	45-50%	85-95%	80-85%
Boiling Point:	>100 C (>212 F)	>100 C (>212 F)	>100 C (>212 F)
Solubility in Water:	complete	complete	complete
pH:	4.8	2.9	4.2-4.5
Flash Point:	none	none, noncombustible liquid	none

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10. STABILITY AND REACTIVITY

Stability: Stable

Incompatibility:

Part A: Strong acids, bases, sodium hypochlorite (bleach), strong oxidizing agents, combustible material, halogenated materials. Contact with base liberates flammable material.

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

Working solution: Strong acids, bases, sodium hypochlorite (bleach), strong oxidizing agents, combustible material, halogenated materials.

Hazardous Decomposition Products:

Part A & Working solution: Ammonia, chloramine, nitrogen oxides (NO<sub>x</sub>), sulfur dioxide.

Part B: Sulfur dioxide

Hazardous Polymerization: Will not occur.

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11. TOXICOLOGICAL INFORMATION

Effects of Exposure:

Inhalation:

Part A & Working solution: 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.

Part B: Expected to be a low hazard for recommended handling.

Eyes:

Part A: May cause transient irritation. However, immediate flushing of the eyes with water will minimize any irritative effect.

Part B: Causes irritation.

Working solution: No specific hazard known. May cause transient irritation.

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Skin:

Part A & Working solution: This material has a low potential to cause allergic skin reactions; however, cases of human skin sensitization have been reported.

Part B: Causes irritation. May cause allergic skin reaction based on human experience.

Ingestion:

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

Part B: May be harmful if swallowed. May cause irritation of the gastrointestinal tract.

12. ECOLOGICAL INFORMATION

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

	Part A	Part B	Working Solution
<b>Potential Toxicity</b>			
Fish LC50 mg/l:	>100	>100	>100
Daphnid EC50 mg/l:	>100	10-100	>100
Algal IC50 mg/l:	>100	Not available	>100
Organics Readily Degradable (>70%):	Yes (7 days)	Yes (14 days)	Yes (7 days)
Potential Bioaccumulation:	Log Pow <1	Log Pow <1	Log Pow <1
COD (approximate g/l):	306	Not available	80
BOD5 (approximate g/l):	249	Not available	65
Potential Toxicity Waste treatment microorganisms EC50 (mg/l):	>100	>100	>100

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13. DISPOSAL CONSIDERATIONS

Part A & Working solution: Discharge, treatment, or disposal may be subject to national, state, or local laws. Flush to sewer with large amounts of water. Since emptied containers retain product residue, follow label warnings even after container is emptied.

Part B: 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 Controlled WHMIS (Canada) Hazard Classification: D2/B; E (metal)

Working solution

- 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: Ammonium thiosulfate; Ammonium acetate; Ammonium bisulfite, as sources of aqueous ammonia.

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16. OTHER INFORMATION

US/Canadian Label Statements:

Part A:

CONTAINS: Ammonium bisulfite (010192-30-0); Sodium bisulfite (007631-90-5); Ammonium thiosulfate (007783-18-8)

CAUTION!  
MAY BE HARMFUL IF SWALLOWED

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