

MATERIAL SAFETY DATA SHEET

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EASTMAN KODAK COMPANY
343 State Street
Rochester, New York 14650

For Emergency Health, Safety, and Environmental Information, call 716 722-5151
For other purposes, call the Marketing and Distribution Center in your area.

Revised Date of Preparation: 05/23/85 Kodak Accession Number: 354722

SECTION I. IDENTIFICATION

- Product Name: KODAK Rapid Selenium Toner
- Formula: Aqueous Mixture
- Kodak Photographic Chemicals Catalog Number(s): CAT 146 4486 - 1 Quart; CAT 140 0936 - 1 Gallon; CAT 146 4478 - 8 Ounces
- Solution Number: 2667
- Kodak's Internal Hazard Rating Codes: R: 1 S: 2 F: 0 C: 0

SECTION II. PRODUCT AND COMPONENT HAZARD DATA

A. COMPONENT(S):	Weight Percent	ACGIH TLV(R)	Kodak Accession No.	CAS Reg. No.
Water	55-60	---	035290	7732-18-5
Ammonium thiosulfate	25-30	---	909586	7783-18-8
Sodium sulfite	5-10	---	901148	7757-83-7
*Sodium selenite**	2	0.2 mg/m3*** as Selenium	069451	0102-18-8

*Principal Hazardous Component(s)

**Chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

***See Section VI-A for additional information on exposure limits

SECTION III. PHYSICAL DATA

- Appearance and Odor: Clear, colorless solution; characteristic mild unpleasant odor
- Boiling Point: GT 100 C (GT 212 F) @ 760 mmHg
- Vapor Pressure: ca. 18 mmHg @ 20 C
- Evaporation Rate (n-butyl acetate = 1): Not Available
- Vapor Density (Air = 1): ca. 0.6
- Volatile Fraction by Weight: ca. 55 %
- Specific Gravity (H2O = 1): 1.32
- pH: ca. 9.0
- Solubility in Water (by Weight): Complete

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SECTION IV. FIRE AND EXPLOSION HAZARD DATA

- Flash Point: None
 - Extinguishing Media: Not Applicable
 - Special Fire Fighting Procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
 - Unusual Fire and Explosion Hazards: Fire or excessive heat may cause production of hazardous decomposition products.
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SECTION V. REACTIVITY DATA

- Stability: Stable
 - Incompatibility: Bases, strong mineral acids
 - Hazardous Decomposition Products: Ammonia and sulfur dioxide
 - Hazardous Polymerization: Will not occur.
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SECTION VI. TOXICITY AND HEALTH HAZARD DATA

A. EXPOSURE LIMITS:

See Section II

OSHA Permissible Exposure Limit (PEL): 0.2 mg/m³ (selenium)

B. EXPOSURE EFFECTS:

Inhalation: Low hazard for usual industrial handling.

Eyes: May cause eye irritation.

Skin: Prolonged or repeated skin contact may cause skin irritation.
May be absorbed through the skin.

Ingestion: Harmful if swallowed.

C. FIRST AID:

Eyes: Immediately flush eyes with plenty of water and get medical attention.

Skin: Immediately wash skin with soap and plenty of water.

Ingestion: If swallowed, if conscious, induce vomiting immediately by giving 1 or 2 glasses of water and touching back of throat with finger or blunt object. Never give anything by mouth to an unconscious person. CALL A PHYSICIAN AS SOON AS POSSIBLE.

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D. TOXICITY DATA:

Test	Species	Result (1)	Classification (2)
Oral LD50	Rat	400-800 mg/kg	Moderately toxic
Skin Irritation	Guinea Pig	Slight irritation	
Eye Irritation	Rabbit	Slight irritation	
Skin Absorption	Guinea Pig	No evidence at 10 mL/kg based on lack of mortality, clinical signs and body weight changes.	

SECTION VII. PERSONAL PROTECTION AND CONTROLS

A. VENTILATION: Good general ventilation should be sufficient.

B. SKIN AND EYE PROTECTION:
Protective gloves should be worn.
Safety glasses should be worn.

SECTION VIII. SPECIAL STORAGE AND HANDLING PRECAUTIONS

Avoid contact with acids and bases.

SECTION IX. SPILL, LEAK, AND DISPOSAL PROCEDURES

Flush material to an acid-free sewer with large amounts of water.
Discharge, treatment, or disposal may be subject to federal, state, or local laws.

SECTION X. ENVIRONMENTAL EFFECTS DATA

This chemical formulation has not been tested for environmental effects. Some laboratory test data and published data are available for the major components of this chemical formulation and these data have been used to provide the following estimate of environmental impact: 1,3-6

This chemical formulation has a moderate biological oxygen demand, and it may cause oxygen depletion in aquatic systems. It is expected to have a high potential to affect aquatic organisms and secondary waste treatment microorganisms. The direct instantaneous discharge to a receiving body of water of an amount of this chemical formulation which will rapidly produce, by dilution, a final concentration of 2.0 mg/L or less is not expected to cause an adverse environmental effect. After dilution with a large amount of water, followed by secondary waste treatment, the chemicals in this formulation are not expected to have any adverse environmental impact.

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SECTION XI. TRANSPORTATION

For transportation information regarding this product, please phone the Eastman Kodak Distribution Center nearest you: Rochester, NY (716) 588-9232; Oak Brook, IL (312) 954-6000; Chamblee, GA (404) 455-0123; Dallas, TX (214) 241-1611; Whittier, CA (213) 693-5222; Honolulu, HI (808) 833-1661.

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SECTION XII. REFERENCES

1. Unpublished data, Health and Environment laboratories, Eastman Kodak Company, Rochester, NY.
 2. Hodge, H.C., and Sterner, J.H., Am. Indust. Hyg. Assn. Quart. 10:93 1949.
 3. Battelle's Columbus Laboratories, Water Quality Criteria Data Book - Vol. 3 - Effects of Chemicals on Aquatic Life - Selected Data from the Literature Through 1968, for the U.S. Environmental Protection Agency, Project No. 18050 GWV, Contract No. 68-01-007, May 1971.
 4. McKee, J.E. and Wolf, H.W., Eds., "Water Quality Criteria," State of California, Publication No. 3-A, 1963.
 5. Bringmann, G. and Kuehn, R., "Results of the Damaging Effect of Water Pollutants on Daphnia magna," Z. Wasser Abwasser Forsch., 10(5), 161-6 (1977) (in German).
 6. Bringmann, G. and Kuehn, R., "Results of Toxic Action of Water Pollutants on Daphnia magna (Straus) Tested by an Improved Standardized Procedure," Z. Wasser Abwasser Forsch., 15(1), 1-6 (1982) (in German).
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