

MATERIAL SAFETY DATA SHEET

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.

Date of Preparation: 12/10/86                      Kodak Accession Number: 444582

SECTION I. IDENTIFICATION

- Product Name: KODALITH RT Liquid Developer (Working Solution)  
 (This information describes the freshly made working solution when prepared according to the product's mixing instructions.)
- Formula: Aqueous Mixture
- Solution Number: A - 4968, B - 5158
- Kodak Hazard Rating Codes: R: 1      S: 2      F: 0      C: 0

SECTION II. PRODUCT AND COMPONENT HAZARD DATA

A.	PRINCIPAL COMPONENT(S):	Weight Percent	TLV (R)	Kodak Accession No.	CAS Reg. No.
	Water	80-85	---	035290	7732-18-5
	Sodium Formaldehyde Bisulfate	1-5	---	906450	870-72-4
	Triethylene glycol	1-5	---	902828	112-27-6
	*Hydroquinone	1-5	2mg/m3**	900356	123-31-9
	*Potassium hydroxide	1-5	2 mg/m3 Ceiling	901383	1310-58-3
	Sodium Bicarbonate	1-5	---	902200	144-55-8
	Potassium Carbonate	1-5	---	900409	584-08-7

\*Principal Hazardous Component(s)

\*\*See Section IV-A for additional information on exposure limits.

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B. PRECAUTIONARY LABEL STATEMENT(S):

CONTAINS: hydroquinone and potassium hydroxide

WARNING!

MAY CAUSE SKIN AND EYE IRRITATION

MAY CAUSE ALLERGIC SKIN REACTION

Avoid contact with eyes, skin, and clothing.

Wash thoroughly after handling.

First Aid: In case of eye contact, immediately flush with plenty of water for at least 15 minutes. Get medical

attention. In case of skin contact, immediately wash with soap and plenty of water.

SECTION III. PHYSICAL DATA

- Appearance and Odor: Clear solution; odorless
- Boiling Point: GT 100 C ( GT 212 F) @ 760 mmHg
- Vapor Pressure: ca.18 mmHg @ 20 C
- Evaporation Rate (n-butyl acetate = 1): ca. 0.4
- Vapor Density (Air = 1): ca. 0.6
- Volatile Fraction by Weight: ca. 85 %
- Specific Gravity (H2O = 1): Not Available
- pH: 10.15
- Solubility in Water (by Weight): Complete

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

- Flash Point: None, noncombustible
- Extinguishing Media:
  - Use agent appropriate for surrounding fire.
- Special Fire Fighting Procedures:
  - Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
- Unusual Fire and Explosion Hazards: None

SECTION V. REACTIVITY DATA

- Stability:
  - Stable
- Incompatibility:
  - None with common materials and contaminants with which the product may reasonably come into contact.
- Hazardous Decomposition Products: None
- Hazardous Polymerization: Will not occur.

SECTION VI. TOXICITY AND HEALTH HAZARD DATA

A. EXPOSURE LIMITS:

See Section II

OSHA Permissible Exposure Limit (PEL): 2 mg/m3 (hydroquinone)

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B. EXPOSURE EFFECTS:

Inhalation: Low hazard for recommended handling.

Eyes: May cause irritation.

Skin: May cause irritation.  
May cause allergic skin reaction.

C. FIRST AID:

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes and get medical attention.

Skin: Flush skin with plenty of water and wash with a non-alkaline (acid) type of skin cleanser.

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SECTION VII. VENTILATION AND PERSONAL PROTECTION

A. VENTILATION:

Good general ventilation should be sufficient.

B. SKIN AND EYE PROTECTION:

Safety glasses should be worn in any type of chemical handling.  
Impervious gloves should be worn.

The routine use of a non-alkaline (acid) type of skin cleanser and regular cleaning of working surfaces, gloves, etc, will help minimize the possibility of allergic skin reaction.

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SECTION VIII. SPECIAL STORAGE AND HANDLING PRECAUTIONS

None

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SECTION IX. SPILL, LEAK, AND DISPOSAL PROCEDURES

Flush to sewer with large amounts of water.

Discharge, treatment, or disposal may be subject to federal, state, or local laws.

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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: (1-14)

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This chemical formulation is a strongly alkaline aqueous solution, and this property may cause adverse environmental effects. It is expected to have a low biological oxygen demand, and it is not expected to cause oxygen depletion in aquatic systems. It is expected to have a high potential to affect aquatic organisms and a moderate potential to affect secondary waste treatment microorganisms and the germination and growth of some plants. The organic components of this chemical formulation are biodegradable and are not expected to persist in the environment. They are not likely to bioconcentrate. The direct instantaneous discharge to a receiving body of water of an amount of this formulation, which will rapidly produce, by dilution, a final concentration of 0.1 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) 254-1300; Oak Brook, IL (312) 654-5300; Chamblee, GA (404) 455-0123; Dallas, TX (214) 241-1611; Whittier, CA (213) 945-1255; 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. Verschueren, K., Handbook of Environmental Data on Organic Chemicals, Second Edition, Van Nostrand Reinhold Company, New York, NY, 1983.
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. 68-01-0007, May 1971.
4. National Association of Photographic Manufacturers, Inc. and Hydrosience, Inc., Environmental Effects of Photoprocessing Chemicals, National Association of Photographic Manufacturers, Harrison, NY, 1974, 2 Vols.
5. Kodak Publication J-41, BOD5 and COD of Photographic Chemicals, Eastman Kodak Co., 1981.
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10. Bringmann, G. and Kuehn, R., Z. Wasser Abwasser Forsch., 15(1), 1-6 (1982) (in German).
11. Dawson, G.W., et al., J. Hazard. Mater., 1(4), 303-18 (1975/77).
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13. Wellens, H., Z. Wasser Abwasser Forsch., 15(2) 49-52 (1982) (in German).
14. Pomona College, Medicinal Chemistry Project, Chemical Parameter Data Base, Leo, A.J. and Hansch, C., Eds., Seaver Chemistry Laboratory, Claremont, CA, June 21, 1985.

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