

MATERIAL SAFETY DATA SHEET

000002811/F/USA  
Approval Date: 10/12/2003  
Print Date: 02/22/2004  
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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: KODAK FLEXICOLOR Stabilizer III and Replenisher / C-41

Catalog Number(s):       856 8792 - To Make 1 gallon (U.S.)  
                          196 5482 - To Make 5 gallons (U.S.)  
                          873 5599 - To Make 12.5 gallons (U.S.)  
                          143 2103 - To Make 75 gallons (U.S.)

Manufacturer/Supplier: EASTMAN KODAK COMPANY, Rochester, New York 14650

For Emergency Health, Safety & Environmental Information, call (585) 722-5151

For other information or to request an MSDS, call (800) 242-2424.

Synonym(s):     Concentrate: KAN 966633; PCD 6017; Q-0038.860  
                  Working solution: KAN 966634

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Weight % - Component - (CAS Registry No.)

Concentrate:

80-85     Water (007732-18-5)  
  10     Formaldehyde (000050-00-0)  
  3     Methanol (000067-56-1)  
  1-5     Octylphenoxypolyethoxyethanol (009036-19-5)  
  1-5     Sodium alkyl phenoxy ether sulfate (009014-90-8)

Working solution:

95-100    Water (007732-18-5)  
< 0.1    Formaldehyde (000050-00-0)  
< 0.1    Methanol (000067-56-1)  
< 0.1    Sodium alkyl phenoxy ether sulfate (009014-90-8)  
< 0.1    Octylphenoxypolyethoxyethanol (009036-19-5)

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3. HAZARDS IDENTIFICATION

Concentrate:

CONTAINS: Formaldehyde (000050-00-0); Methanol (000067-56-1);  
Octylphenoxypolyethoxyethanol (009036-19-5)

DANGER!  
MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTIONS  
CAUSES EYE BURNS  
POSSIBLE CANCER HAZARD - MAY CAUSE CANCER BASED ON ANIMAL DATA  
HARMFUL IF INHALED OR SWALLOWED  
VAPOR IRRITATING TO THE EYES AND RESPIRATORY TRACT  
CAUSES SKIN IRRITATION

HMIS Hazard Ratings:

Health - 2 \*, Flammability - 1, Reactivity - 0, Personal Protection - X

NFPA Hazard Ratings:

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

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Working solution:

LOW HAZARD FOR RECOMMENDED HANDLING

HMIS Hazard Ratings:

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

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:

Concentrate: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

Working solution: If symptomatic, move to fresh air. Treat symptomatically. Get medical attention if symptoms persist.

Eyes:

Concentrate: Immediately flush with plenty of water for at least 15 minutes. Get medical attention immediately.

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

Skin:

Concentrate: 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.

Working solution: Wash with soap and water. Get medical attention if symptoms occur.

Ingestion:

Concentrate: Do NOT induce vomiting. Give victim a glass of water. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

Working solution: 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:

Concentrate: Water spray carbon dioxide (CO2), dry chemical, alcohol foam

Working solution: Use appropriate agent for adjacent fire.

Special Fire-Fighting Procedures:

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

Working solution: Wear self-contained breathing apparatus and protective clothing.

Hazardous Combustion Products:

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

Working solution: None (noncombustible)

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:

Concentrate: Do not breathe vapor at concentrations greater than the exposure limits. Do not get in eyes, on skin, on clothing. Use with adequate ventilation. Wash thoroughly after handling.

Working solution: Avoid prolonged or repeated breathing of vapor. Avoid contact with eyes and prolonged or repeated contact with skin. 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:

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

Working solution: Keep container closed.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA standard 29CFR 1910.1048 should be consulted for specific details regarding respiratory, skin, and eye protection against formaldehyde. The standard also provides for establishing regulated areas, respiratory protection programs, housekeeping, medical surveillance, recordkeeping and employee information and training when necessary.

Exposure Limits:

ACGIH Threshold Limit Value (TLV):

Formaldehyde: 0.3 ppm Ceiling  
Methanol: 200 ppm TWA, 250 ppm STEL, Skin

OSHA (USA) Permissible Exposure Limit (29 CFR 1910.1048 Formaldehyde Standard)

Formaldehyde: 0.75 ppm TWA, 2 ppm STEL, OSHA (USA) Action Level: 0.5 ppm

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

Methanol: 200 ppm TWA, Skin

Ventilation:

Concentrate: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

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

Respiratory Protection:

Concentrate: If formaldehyde is emitted at levels requiring respiratory protection, the following respirator type should be worn: Full facepiece with cartridges or canisters specifically approved by NIOSH for protection against formaldehyde or a Type C air-supplied respirator demand type, with full facepiece, hood, or helmet. If respirators are used, a program should be instituted to assure compliance with OSHA Standard 29CFR 1910.134 and 29CFR 1910.1048.

Working solution: None should be needed.

Eye Protection:

Concentrate: Wear safety glasses with side shields (or goggles) and a face shield.

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

Skin Protection:

Concentrate: All skin contact with liquids containing 0.1 percent or more formaldehyde should be prevented by use of chemical protective clothing made

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of material impervious to formaldehyde and the use of other personal protective equipment. 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: Neoprene rubber, nitrile rubber.

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.

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

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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Liquid

Color: Colorless

Odor: Slight formaldehyde

Specific Gravity (water = 1):

Concentrate: 1.02

Working solution: 1.001

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

Vapor Density (Air = 1): 0.6

Volatile Fraction by Weight:

Concentrate: 80-85 %

Working solution: 95-100 %

Boiling Point: >100°C (>212°F)

Solubility in Water: Complete

pH:

Concentrate: 6.0

Working solution: 9.0

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, strong bases, metal salts, hydroxides.

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

Hazardous Decomposition Products:

Concentrate: Formaldehyde

Hazardous Polymerization: Will not occur.

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11. TOXICOLOGICAL INFORMATION

Effects of Exposure:

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General:

Concentrate: Contains Methanol, Ingestion may cause visual disturbances or blindness.

Inhalation:

Concentrate: Formaldehyde is detectable by most people at levels below 1 ppm. It produces mild sensory irritation of the eyes, nose and throat at 2-5 ppm, becomes unpleasant at 5-10 ppm, and is intolerable at higher concentrations causing severe burning sensations of the nose and throat with coughing. Higher concentrations may cause chest constriction, headache, bronchopneumonia, dysphagia, edema, and spasms of the larynx and dyspnea. Exposure to formaldehyde may cause respiratory sensitization in some individuals or aggravate pre-existing asthmatic conditions.

Working solution: Low hazard for recommended handling.

Eyes:

Concentrate: Causes burns. Vapor causes eye irritation and tearing.

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

Skin:

Concentrate: Causes irritation. May cause allergic skin reaction.

Working solution: Low hazard for recommended handling.

Ingestion:

Concentrate: Harmful if swallowed. May cause burns of the mouth, esophagus, and stomach. Retinal and kidney damage may also occur. Immediate severe abdominal pain occurs, often with vomiting, nausea, diarrhea, dizziness, unconsciousness or coma, anuria, convulsions, and possible death.

Working solution: Expected to be a low ingestion hazard.

Data for formalin:

Acute Toxicity Data:

Oral LD-50 (rat): 800 mg/kg

Dermal LD-50: 270 mg/kg

Skin irritation: moderate irritation

Eye irritation: severe irritation

Inhalation LCLo (rat): 250 ppm/4 hour(s), formaldehyde gas

Carcinogenicity Data:

International Agency for Research on Cancer concluded there is sufficient evidence that formaldehyde is carcinogenic to rats. Formaldehyde was tested for carcinogenicity by inhalation exposure at high concentrations in rats, hamsters, and mice. A significant incidence of squamous cell carcinomas of the nasal cavity were induced in rats, but not hamsters or mice. Levels of formaldehyde that caused nasal tumors also caused acute

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degeneration, necrosis, inflammation, and increased cell replication in the nasal mucosa of rats following inhalation exposure. In addition, IARC concluded there was limited evidence for carcinogenicity to humans.

12. ECOLOGICAL INFORMATION

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

	Concentrate	Working Solution
Potential Toxicity		
Fish LC50 mg/l:	>100	>100
Daphnid EC50 mg/l:	>100	>100
Algal IC50 mg/l:	Not available	Not available
Organics Readily Degradable (>70%):	Yes (14 days)	Yes (14 days)
Potential Bioaccumulation:	Log Pow <1	Log Pow <1
COD (approximate g/l):	143	0.6
BOD5 (approximate g/l):	78	0.1
Potential Toxicity Waste treatment microorganisms EC50 (mg/l):	>100	>100

secondary waste treatment, this material is not expected to cause adverse environmental effects.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

For transportation information regarding this product call the Kodak Worldwide Transportation Hazmat Hot Line: (585) 722-2400 between 8 a.m. and 5 p.m. (Eastern Standard Time), Monday through Friday.

15. REGULATORY INFORMATION

- Material(s) known to the State of California to cause cancer: Formaldehyde
- 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) (formaldehyde): 2A
  - American Conference of Governmental Industrial Hygienists (ACGIH) (formaldehyde): suspected human carcinogen (A2)

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- National Toxicology Program (NTP) (formaldehyde): reasonably anticipated to be a carcinogen (2)
  - Occupational Safety and Health Administration (OSHA) (formaldehyde): potential cancer hazard
- 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: Formaldehyde, Methanol
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16. OTHER INFORMATION

US/Canadian Label Statements:

Concentrate:

CONTAINS: Formaldehyde (000050-00-0); Methanol (000067-56-1); Octylphenoxypolyethoxyethanol (009036-19-5)

DANGER!

MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTIONS

CAUSES EYE BURNS

POSSIBLE CANCER HAZARD - MAY CAUSE CANCER BASED ON ANIMAL DATA

HARMFUL IF INHALED OR SWALLOWED

VAPOR IRRITATING TO THE EYES AND RESPIRATORY TRACT

CAUSES SKIN IRRITATION

Do not breathe vapor.

Do not get in eyes, on skin, on clothing.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

FIRST AID: If swallowed, do NOT induce vomiting. Give victim a glass of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. If inhaled, move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. 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 immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

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.

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.

Working solution:

LOW HAZARD FOR RECOMMENDED HANDLING

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

FIRST AID: Treat symptomatically. Get medical attention if symptoms occur.

Keep out of reach of children

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

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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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R-2, S-3, F-1, C-0 CARC

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