

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION

Product Name Standard B&W Film Developer
 Catalog Number N/A
 Chemical Name Mixture
 Common Name N/A
 Product Use Developer for black and white film.

MANUFACTURER

Sprint Systems of Photography, Inc.
 1057 Chopmist Hill Road
 Scituate, RI 02857
 800 356-5073

EMERGENCY TELEPHONE NUMBER

ChemTel (1-800-255-3924)

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS NUMBER	EXPOSURE CONTROLS	
		OSHA PEL	ACGIH TLV
Dimethylformamide	68-12-2	10 ppm	10 ppm
Diethylene glycol	111-46-6	N/A	N/E
Ethylene glycol	107-21-1	N/E	100 mg/m ³ (Aerosol)
Hydroquinone	123-31-9	2 mg/m ³	2 mg/m ³
Sodium metabisulfite	7681-57-4	N/E	5 mg/m ³
Sodium metaborate	7775-19-1	N/E	N/E
Water	7732-18-5	N/E	N/E

See Section 15 for OSHA Regulatory Status

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Light yellow to brown solution with a sulfur dioxide odor.	life threatening asthma.
Warning! May cause skin sensitization. May cause mild irritation to skin, eyes, and the respiratory tract. Harmful if swallowed. May be absorbed through skin. May cause	Will not burn. In case of fire, use extinguishing media suitable for the material that is burning.

POTENTIAL HEALTH EFFECTS

PRIMARY ROUTE(S) OF ENTRY

Inhalation (breathing), eye and skin contact.

SYMPTOMS OF EXPOSURE

Skin Contact: May cause mild irritation. May be absorbed through skin causing effects similar to ingestion or inhalation. Contact may cause sensitization.

Inhalation: Breathing vapors or mist may irritate the mucous membranes of the nose, throat, respiratory tract, and may cause headache, light-headedness, dizziness, nausea, and liver injury.

Eye Contact: May cause mild irritation.

Ingestion: Can cause kidney damage, and may be toxic to the embryo or cause teratogenic effects. Can cause life-threatening asthma.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Pre-existing skin disorders, eye problems, or impaired liver and kidneys. Persons sensitized to sodium metabisulfite are at risk.

REPORTED AS CARCINOGEN OR POTENTIAL CARCINOGEN

- Not Applicable
- OSHA Suspect Carcinogen
- National Toxicology Program (NTP)
- International Agency for Research on Cancer (IARC)

4. FIRST AID MEASURES

Skin contact: Wash affected areas with plenty of water, and soap if available, for several minutes. Seek medical attention if irritation develops and persists.

Inhalation: Remove from area to fresh air. Seek medical attention if respiratory irritation develops or if breathing becomes difficult. Get immediate medical attention. If victim is having trouble breathing, transport to medical care and, if available, give supplemental oxygen.

Eye contact: Rinse eye with water. Remove any contact lenses, and continue flushing with plenty of water for several

minutes. Seek medical attention if irritation develops and persists..

Ingestion: Give 3-4 glasses of water, but DO NOT induce vomiting. If vomiting occurs, give fluids again. Get medical attention to determine whether vomiting or evacuation of stomach is necessary. Do not give anything by mouth to an unconscious or convulsing person.

NOTE TO PHYSICIAN

None known.

5. FIRE FIGHTING MEASURES

Flash Point and Method > 200 °F (PM CC)

material that is burning.

GENERAL HAZARD

Fire or excessive heat may produce hazardous decomposition products.

SPECIAL FIREFIGHTING INSTRUCTIONS

None known.

EXTINGUISHING MEDIA

In case of fire, use extinguishing media suitable for the

FIREFIGHTING EQUIPMENT

As in any fire, wear NIOSH approved, positive-pressure self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Wear appropriate protective equipment (See Section 8). Avoid contact with eyes, skin, and clothing.

Ventilate area of leak or spill. Absorb with kitty litter, sand or earth and package in a suitable container for disposal.

7. HANDLING AND STORAGE

HANDLING

Wear appropriate protective equipment (See Section 8). Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

STORAGE

Keep in a tightly closed container, stored in a cool, dry, ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS

Use engineering controls to reduce air contaminants to permissible exposure level.

qualified person for the specific work conditions.

PERSONAL PROTECTION

Respirator: In conditions where high concentrations of vapors or mist are present or exposure limits are exceeded, wear a respirator that has been selected by technically

Eye Protection: Wear approved safety glasses.

Gloves: Butyl rubber. Note: inspect gloves before each use and discard if they show tears, pinholes, or signs of wear.

Clothing: Wear long-sleeved clothing. Use rubber apron.

Other: Eye wash; safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

State Liquid
Color Light yellow to brown
Odor Sulfur dioxide
Melting Point °F N/A
Boiling Point °F > 212

Specific Gravity @ 25 °F 1.2
Vapor Density (Air = 1) N/A
Vapor Pressure (mm Hg) Negligible
pH 8.7
Water Solubility Soluble

Solubility in other liquids N/E

10. STABILITY AND REACTIVITY

REACTIVITY

Stable under normal use conditions. Will decompose in acid solutions, liberating toxic and irritating sulfur dioxide gas.

INCOMPATIBILITIES

Acidic materials, strong oxidizers, metals, and organic materials.

HAZARDOUS DECOMPOSITION PRODUCTS

CO₂, CO, and oxides of sulfur.

CONDITIONS TO AVOID

Excessive heat, acids.

11. TOXICOLOGICAL INFORMATION

The product is not an irritant. The primary dermal irritation score was 0.08 following a 4-hour occluded dermal exposure in a modified FHSA/CPSC Design, 16 CFR 1500.

For Dimethylformamide:

Inhalation LC₅₀ (mouse): 9,400 mg/m³/2 hr
Oral LD₅₀ (rat): 2,800 mg/kg
Oral LD₅₀ (mouse): 42 mg/kg
Dermal LD₅₀ (rabbit): 4,720 mg/kg

Long-term breathing of vapors by workers has caused liver damage (hepatitis).

For Diethylene glycol:

Oral LD₅₀ (rat): 12,565 mg/kg
Oral LD₅₀ (mouse): 23,700 mg/kg
Dermal LD₅₀ (rabbit): 11,890 mg/kg

For Sodium metaborate:

Oral LD₅₀ (rat): 2,330 mg/kg

A human study of an occupationally exposed borate worker population showed no adverse reproductive effects. Animal studies of similar inorganic borates demonstrated reproductive effects in males.

For Ethylene glycol

Inhalation LC₅₀ (rat): 10,876 mg/kg
Oral LD₅₀ (rat): 4,700 mg/kg
Oral LD₅₀ (mouse): 5,500 mg/kg
Dermal LD₅₀ (rabbit): 9,530 µL/kg

Swallowing can cause nausea, vomiting, abdominal pain and weakness, as well as drunkenness, dizziness, stupor, convulsions and coma. Death could result from respiratory arrest or cardiovascular collapse. Kidney damage may result.

Animal studies indicate that repeated ingestion can cause formation of bladder and kidney stones, as well as kidney damage.

For Hydroquinone:

Oral LD₅₀ (rat): 320 mg/kg
Oral LD₅₀ (mouse): 245 mg/kg

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

For Diethylene glycol:

96 hr LC₅₀ (fathead minnow): >100 mg/L. Cond: Static.
96 hr LC₅₀(water flea); 0.3-1.0 mg/L. Cond: Static.
15min EC₅₀ (Photobacterium phosphoreum): 228 mg/L Microtox test.

For Hydroquinone:

96 hr LC₅₀ (rainbow trout): 0.097 mg/L.
96 hr LC₅₀ (fathead minnow): 0.1-0.18 mg/L.
48 hr EC₅₀ (water flea): 0.05 mg/L.
30 min EC₅₀ (Photobacterium phosphoreum): 0.0382 mg/L Mictotox test.

For Ethylene glycol:

96 hr LC₅₀ (rainbow trout): 41,000 mg/L. Cond: 20°C.
96 hr LC₅₀ (bluegill): 27,500-41,000 mg/L.
96 hr LC₅₀ (goldfish): 27,500-41,000 mg/L.
96 hr LC₅₀ (water flea): 46,300 mg/L.
30 min EC₅₀ (Photobacterium phosphoreum): 620.0 mg/l Microtox test.

ENVIRONMENTAL MOVEMENT AND PARTITIONING

Not known.

ENVIRONMENTAL FATE

Not known.

13. DISPOSAL CONSIDERATIONS

RCRA Waste Code: Not regulated.

14 TRANSPORT INFORMATION

Not regulated by DOT, ICAO, or IMDG.

15. REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)

Hazardous Non-Hazardous

CERCLA/SUPERFUND (40 CFR 117, 302)

Hydroquinone; RQ - 100 lbs.

SARA EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355)

Hydroquinone; TPQ - 500 lbs.

SARA HAZARD CATEGORIES (40 CFR 370)

Acute Chronic Fire
 Pressure Reactive None

SARA TOXIC CHEMICALS (40 CFR 372)

Hydroquinone - < 5%
Dimethylformamide - < 5%
Ethylene glycol - <5%

TSCA CHEMICAL SPECIFIC RULES

None known

INVENTORY STATUS

All ingredients of this product are on the TSCA inventory

STATE REGULATIONS

Florida Hazardous Substance List . . . Dimethylformamide, ethylene glycol, hydroquinone, and sodium metabisulfite.

Massachusetts Right To Know List . . . Dimethylformamide, ethylene glycol, hydroquinone, and sodium metabisulfite.

Minnesota Hazardous Substance List . Diethylene glycol, Dimethylformamide, ethylene glycol, hydroquinone, and sodium metabisulfite.

New Jersey Right To Know ListDimethylformamide, ethylene glycol, hydroquinone, potassium hydroxide, and sodium metabisulfite.

Rhode Island Hazardous Substance List:
Dimethylformamide, ethylene glycol, hydroquinone, and sodium metabisulfite.

16. OTHER INFORMATION

NFPA RATING

Health 2
Fire 1
Reactivity 0

PREPARATION INFORMATION

Prepared by: Sprint Systems of Photography, Inc.
Date Prepared: . April 19, 2000
Replaces: November 10, 1999

REVISION INFORMATION

Sections 3, 4, 6, 7, 8, 11, 14 and 16 were updated to reflect results of a dermal irritation study.

ABBREVIATIONS

C - Ceiling limit
N/A - Not applicable
N/D - Not determined
N/E - Not established
N/K - Not known
NAERG - North American Emergency Response Guidebook
RQ - Reportable Quantity
TPQ - Threshold Planning Quantity