

Brock University Visual Arts Department Darkroom Safety and Orientation Guide

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MSDS sheets for darkroom chemicals

1) Introduction:

This guide is designed to assist you in working safely and efficiently in the darkroom. All aspects of expected safe conduct, how to store and handle chemicals, and what to do in the event of a chemical spill are outlined here. All instructors and students working in the Brock University Visual Arts Department Darkroom are required to read this document in its entirety, and take part in a training/orientation session lead by the instructor. The conclusion of your training/orientation will be filling out an on-line quiz that covers the information herein, failure to pass this quiz with a mark of 80% or higher will result in your having to do a second safety session. Please visit the Visa website Darkroom page to complete the quiz.

In order to prevent students from sharing quiz answers student quiz results will only be reported to student as to whether a student passed or not.

Upon completion of the safety training/orientation session and quiz students must sign a training completion form indicating that they have completed the safety session. If you have any questions regarding any of the information covered in this guide, please contact the Visual Arts Department Facility Technician, or the Photography Instructor.

Brock University Health & Safety regulations require that anyone who comes into contact with potentially hazardous substances must receive specific training. This training will cover the following:

- How to mix all darkroom chemicals from concentrates.
- How to label all containers, and how to pour waste chemicals into the waste chemical containers.
- Basic familiarity with the WHMIS system, and the dangers of the chemistry in use in the darkroom.
- What to do in the event of a spill

2) General Safety Rules:

- Only 12 students are allowed to work in the darkroom at any given time.
- Only students who have completed darkroom training are permitted to work in the darkroom.
- Only students who have completed the safety training session and on-line quiz are allowed to work in the darkroom.
- Students are required to familiarize themselves with the MSDS sheets of any chemical they work with for the first time. These sheets are available in a binder on the darkroom wall.
- Keep the work area clean and uncluttered to prevent tripping hazards.
- Wet and dry areas should be clearly separated.
- Only store chemicals in their appropriate storage cupboard or shelf.
- Never eat, drink or smoke in the darkroom.
- Appropriate safety equipment is provided and must be worn at all times: gloves, goggles and aprons.
- Always wash hands with soap and warm water after working with chemicals.
- Know how to use the spill kit and eye wash station (and where they are stored) prior to an actual emergency.
- Pregnant women should not be exposed to any powdered photographic chemicals.
- Store all chemicals in locations that will minimize the chance of breakage and splashing.
- All chemicals must be labeled with the proper MSDS label.
- Keep all containers & trays closed or covered if not in use to prevent the release of toxic gases.
- Do not wash any chemicals down the sink.
- All spent chemicals should be placed into an appropriate waste container, then labeled with the appropriate WHMIS label.

3) Safety Equipment

The following items are available for use in the darkroom:

- Fire extinguisher: currently located outside of the darkroom in the hallway beside the GL162 studio door.
- Eyewash (in each room where smaller amounts of chemicals are used)
- Waste containers for each chemical
- Safety glasses/goggles for each person in the darkroom
- Gloves
- Tongs
- Darkroom safety guide

Eye Protection

All persons in the darkroom (including visitors) must wear safety glasses/goggles at all times, even when not performing a chemical operation (this is only when others are working with chemistry at the same time). Contact lenses should not be worn in the darkroom because of the possibility of trapping foreign materials against the cornea and their difficulty to remove in the case of a splash. **Safety goggles, not safety glasses shall be worn whenever chemicals are being poured.**

Gloves

Gloves should be worn at all times when working with chemicals. Confirm there are no cracks or perforations in the gloves before use. Prior to leaving the work area, gloves should be removed to prevent the spread of chemicals and stored in the glove storage receptacle.

Clothing

Clothing should offer protection from splashes and spills, and should be easily removable in case of accident. Aprons or lab coats are highly recommended. High-heeled, sandals, open-toed shoes or shoes made of woven material should not be worn. Shorts and miniskirts are also not advised.

4) Material Safety Data Sheets (MSDS) & Chemical Storage

The Visual Arts Department is required to have Material Safety Data Sheets (MSDS) available to any individual working with hazardous chemicals. Faculty, staff and students have both a need and a right to know the hazards and identities of the chemicals they are exposed to when working. They Everyone using the darkroom must also need to know what protective measures are available to prevent adverse effects from occurring.

Information that can be found in an MSDS sheet includes:

~ The identity of the chemical substance ~ Physical and chemical characteristics ~ Physical and health hazards ~ Primary routes of entry ~ OSHA Permissible Exposure Limits (PEL's) ~ Carcinogenic status ~ Precautions for safe handling and use (including personal protective equipment) ~ Spill response ~ Emergency and first aid procedures ~ Date of the MSDS

MSDS sites/resources on the Internet

There are many sites on the internet that list darkroom related MSDS. Below is the manufacturers web site supplying the Brock darkroom:

Please visit the Visa Darkroom FAQ page on the Visual Arts Department website to consult directly with the MSDS sheets with each chemical you will be working with. Also, all MSDS sheets for chemistry used in the darkroom are available for reference in the MSDS binder on the darkroom wall.

<http://www.brocku.ca/humanities/departments-and-centres/visual-arts/future-students/film-photography-darkroom>

Students may also add a Brock H&S MSDS resource page to their Brock Portal page by clicking on the "Add More" option in the upper right of the main page and selecting MSDS online database:

The Health & Safety Department page of Brock University:

<http://brocku.ca/hr-ehs/environment-health-safety/health-safety>

The Province of Ontario WHMIS resource page:

<http://www.labour.gov.on.ca/english/hs/pubs/whmis/index.php>

You are responsible for reviewing and being familiar with the MSDS information for the following chemistry:

Film Developer
Print Developer
Fixer
Fixer Remover
Stop Bath
Wetting Agent

The full MSDS information sheet for each of these chemicals is listed in the Appendix.

If any new chemistry is added to the darkroom processes in any Visual Arts Department photography course you are required to familiarize yourself with the MSDS sheets of each item. These new sheets will be appended to the MSDS binder in the darkroom and the Visa Darkroom information page on the departmental website.

Chemical Storage

All chemicals must be stored properly, including proper labeling, proper placement (off the floor) and compatible storage containers. Improperly stored and labeled chemicals can result in the following dangerous conditions:

- ~ Release of potentially toxic vapors.
- ~ Degraded containers that allow chemicals to become contaminated.
- ~ Degraded containers releasing vapors that can affect the integrity of nearby containers.
- ~ Degraded labels that result in generation of unknowns.

All chemicals MUST be correctly labeled.

Proper chemical storage includes the following practices:

- ~ Containers must be dated when they arrive.
- ~ Older chemicals are to be used first.

5) Chemical Disposal

As a chemical user, YOU have a legal and moral responsibility to ensure the proper disposal of any hazardous waste you generate. In addition to potential citations, institutional fines for improper waste disposal can also result in negative media attention and damage to the University's reputation.

When chemicals have been exhausted, the following steps should be followed to dispose of them:

- ~ Place spent chemical into appropriate container. **DO NOT MIX CHEMICALS**. Seal container.
- ~ Using a WHMIS hazardous waste label, label the container including the chemical name and the date on the container.
- ~ As soon as the container is full, e-mail or inform the photography instructor.
- ~ The Facilities Technician will be informed that pickup of wasted chemicals is required, and is responsible for affixing a numbered waste tag to the container and forwarding a list of the chemicals to Science Stores when scheduled for pick up.
- ~ The chemical will be picked up at the darkroom on a scheduled pickup day by a hazardous waste contractor contracted by Science Stores.

6) Emergency Chemical Spill Procedures

For MINOR spills that are known to be of limited danger:

In the event of a spill involving the release of a type or quantity of chemical that does not pose an immediate risk to health, and does not have the potential to become a major emergency within a short time period:

1. Notify the Visual Arts Dept. Facilities Technician and the photography instructor.
2. Isolate the area. Close darkroom doors and evacuate the immediate area if necessary.
3. Remove all ignition sources and establish exhaust ventilation if possible, a large box fan is available for this purpose (stored in the anteroom of the darkroom) and should be placed at the entry of the darkroom positioned to vent air out of the darkroom.
4. Choose appropriate personal protective equipment such as gloves, goggles, lab coat etc.
5. Utilizing your spill kit and spill guide confine and contain the spill with absorbent material. Collect the solid material into the dustpan and place into the 5 gallon bucket or other appropriate container. Call the Instructor who will arrange for pick up.

In the event of a serious injury in the darkroom the following procedures are to be followed:

1. Clear anyone not assisting the injured person from the room.
2. Report the injury to the instructor, if the instructor is not present contact security at extension 3200. There is a telephone beside the sink in the GL162 studio across from the darkroom
3. Limit access to the area.
4. Remain with the injured individual until help arrives.

When reporting an injury you will be asked for the following information:

- ~ Where the injury occurred (**building and room number**)
- ~ Nature of the injury (**SPELL CLEARLY and SLOWLY**)
- ~ Any immediate actions you took
- ~ A call back number (if available)

Spill Kit:

This is a yellow bucket which located just inside of the front door of the darkroom ante-room that contains all of the spill cleanup materials. The kit consists of a spill guide, a range of absorbent materials, sealable bags, gloves, goggles and goggles. This kit is only to be used in the event of a spill.

7) Darkroom Closing Procedures

- ~ Proper disposal of hazardous materials is required whenever a student leaves the Darkroom.
- ~ You are responsible for leaving the Darkroom clean and ready for use by the next group/student.

8) Additional Tips For Handling Chemicals.

- ~ ALWAYS discard stop bath solutions contaminated with developer.
- ~ ALWAYS cover all baths when not in use (to prevent release of toxic vapors).



STANDARD FILM DEVELOPER

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION		MANUFACTURER
Product Name	Standard B&W Film Developer	Sprint Systems of Photography, Inc.
Catalog Number	N/A	1057 Chopmist Hill Road
Chemical Name	Mixture	Scituate, RI 02857
Common Name	N/A	800 356-5073
Product Use	Developer for black and white film.	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	Ingestion: Can cause kidney damage, and may be toxic to the embryo or cause teratogenic effects. Can cause life-threatening asthma.
Inhalation (breathing), eye and skin contact.	
SYMPTOMS OF EXPOSURE	MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Skin Contact: May cause mild irritation. May be absorbed through skin causing effects similar to ingestion or inhalation. Contact may cause sensitization.	Pre-existing skin disorders, eye problems, or impaired liver and kidneys. Persons sensitized to sodium metabisulfite are at risk.
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.	REPORTED AS CARCINOGEN OR POTENTIAL CARCINOGEN
Eye Contact: May cause mild irritation.	<input checked="" type="checkbox"/> Not Applicable
	<input type="checkbox"/> OSHA Suspect Carcinogen
	<input type="checkbox"/> National Toxicology Program (NTP)
	<input type="checkbox"/> 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)

GENERAL HAZARD

Fire or excessive heat may produce hazardous decomposition products.

EXTINGUISHING MEDIA

In case of fire, use extinguishing media suitable for the

material that is burning.

SPECIAL FIREFIGHTING INSTRUCTIONS

None known.

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 Microtox 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 List Dimethylformamide, 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

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

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.



QUICK SILVER PRINT DEVELOPER

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION		MANUFACTURER
Product Name	Quicksilver Print Developer	Sprint Systems of Photography, Inc.
Catalog Number	N/A	1057 Chopmist Hill Road
Chemical Name	Mixture	Scituate, RI 02857
Common Name	N/A	800 356-5073
Product Use	Photographic print developer.	EMERGENCY TELEPHONE NUMBER
		ChemTel (1-800-255-3924)

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS NUMBER	EXPOSURE CONTROLS	
		OSHA PEL	ACGIH TLV
Diethylene glycol	111-46-6	N/E	N/E
Hydroquinone	123-31-9	2 mg/m ³	2 mg/m ³
Potassium carbonate	584-08-7	N/E	N/E
Sodium sulfite	7757-83-7	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 brown liquid with a mild, sweet odor.	respiratory tract. Contact may cause sensitization.
Danger! Causes eye and skin burns. May cause life threatening asthma. May cause irritation to the	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.	Ingestion: Swallowing can cause gastrointestinal pain, cramps, nausea, vomiting, or central nervous system depression, and may cause kidney or liver damage; can cause life threatening asthma.
SYMPTOMS OF EXPOSURE Skin Contact: Causes burns to abraded skin. Contact may cause depigmentation or sensitization. Inhalation: Breathing vapors or mist may irritate the mucous membranes of the nose, throat, respiratory tract, and may cause headache, light-headedness, dizziness, and nausea. Eye Contact: Causes eye burns.	MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE Pre-existing skin disorders, eye problems, or impaired liver and kidney. Persons sensitized to sodium sulfite are at risk.
	REPORTED AS CARCINOGEN OR POTENTIAL CARCINOGEN <input checked="" type="checkbox"/> Not Applicable <input type="checkbox"/> OSHA Suspect Carcinogen <input type="checkbox"/> National Toxicology Program (NTP) <input type="checkbox"/> International Agency for Research on Cancer (IARC)

4. FIRST AID MEASURES

Skin contact: Wash affected areas with large amounts of running water, and soap if available, for 15 minutes. Remove contaminated clothing and shoes. Get immediate medical attention. Wash clothing and decontaminate shoes before reuse.

Inhalation: Remove from area to fresh air. If not breathing, clear airway and start mouth-to-mouth artificial respiration or use a bag- mask respirator. Get immediate medical attention. If victim is having trouble breathing, transport to medical care and, if available, give supplemental oxygen.

Eye contact: Immediately rinse eyes with water. Remove any contact lenses. Hold eyelids apart to ensure rinsing of the

entire surface of the eyes and lids with water. Continue flushing eyes with large amounts of running water for at least 15 minutes. If physician is not available, flush for an additional 15 minutes. Get immediate medical attention

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 $> 200^{\circ}\text{F}$ (PMCC)

GENERAL HAZARD

Fire or excessive heat may produce hazardous decomposition products.

EXTINGUISHING MEDIA

In case of fire use extinguishing media suitable for the material that is burning.

SPECIAL FIREFIGHTING INSTRUCTIONS

None known.

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). Do not get in eyes, on skin, or on 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). Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

STORAGE

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS

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

person for the specific work conditions.

Eye Protection: Wear approved safety goggles.

Gloves: Rubber (butyl, Neoprene).

PERSONAL PROTECTION

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

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

Other: Eye wash; safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

State	Liquid	Vapor Density (Air = 1)	0.6
Color	Light brown	Vapor Pressure (mm Hg)	N/A
Odor	Mild, sweet	pH	10.68
Melting Point °F	N/A	Water Solubility	Soluble
Boiling Point °F	> 212	Solubility in other liquids	N/E
Specific Gravity @ 68 °F	1.315		

10. STABILITY AND REACTIVITY

REACTIVITY

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

HAZARDOUS DECOMPOSITION PRODUCTS

CO₂, CO, and oxides of sulfur

INCOMPATIBILITIES

Acidic materials, strong oxidizers, metals and organic materials.

CONDITIONS TO AVOID

Excessive heat, acids.

11. TOXICOLOGICAL INFORMATION

The product is corrosive to abraded skin in a modified FHSA/CPSC Design, 16 CFR 1500 test procedure. It is not corrosive to intact skin.

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 Hydroquinone:

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

For Sodium sulfite:

Oral LD₅₀ Mouse: 820 mg/kg

For Potassium carbonate:

Oral LD₅₀ (rat): 1,870 mg/kg
Oral LD₅₀ (mouse): 2,570 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.

ENVIRONMENTAL MOVEMENT AND PARTITIONING

Not known.

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 Microtox test.

ENVIRONMENTAL FATE

Not known.

13. DISPOSAL CONSIDERATIONS

RCRA Waste Code: Not regulated.

14**TRANSPORT INFORMATION**

DOT Hazard Class Not Regulated

15.**REGULATORY INFORMATION**

OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) Hazardous Non-Hazardous**SARA HAZARD CATEGORIES (40 CFR 370)** Acute Chronic Fire
 Pressure Reactive None**CERCLA/SUPERFUND (40 CFR 117, 302)**

Hydroquinone; RQ 100 lbs.

SARA TOXIC CHEMICALS (40 CFR 372)

Hydroquinone <5%.

SARA EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355)

Hydroquinone TPQ 500 lbs.

TSCA CHEMICAL SPECIFIC RULES

None known.

INVENTORY STATUS

All ingredients of this product are on the TSCA inventory.

STATE REGULATIONSFlorida Hazardous Substance List Hydroquinone
Massachusetts Right To Know List Hydroquinone
Minnesota Hazardous Substance List . . Diethylene glycol and
hydroquinone
New Jersey Right To Know List Hydroquinone
Rhode Island Hazardous Substance List Hydroquinone,
Diethylene glycol

16.**OTHER INFORMATION**

NFPA RATINGHealth 3
Fire 1
Reactivity 0**PREPARATION INFORMATION**Prepared by: . . . Sprint Systems of Photography, Inc.
Date Prepared: . . May 10, 2003
Replaces: . . . June 21, 2000**ABBREVIATIONS**C - Ceiling limit
ERG - Emergency Response Guidebook
N/A - Not applicable
N/D - Not determined
N/E - Not established
N/K - Not known
RQ - Reportable Quantity
TPQ - Threshold Planning Quantity**REVISION INFORMATION**Section 11 was updated to reflect results of a irritation study.
Section 14 was revised to take into account skin corrosion test results.



BLOCK STOP BATH MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION

Product Name Block Stop Bath
 Catalog Number N/A
 Chemical Name Mixture
 Common Name N/A
 Product Use Photographic stop bath solution.

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
Acetic acid	64-19-7	10 ppm	10 ppm (TLV) - 15 ppm (STEL)
Sodium acetate	127-09-3	N/E	N/E
Water	7732-18-5	N/A	N/A

See Section 15 for OSHA Regulatory Status.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Clear yellow liquid with a vanilla/vinegar odor. In case of fire use foam, carbon dioxide (CO₂), or dry chemical.
 Warning! Causes eye irritation. Breathing vapors or mist may cause asthma-like symptoms. May be harmful if swallowed.

POTENTIAL HEALTH EFFECTS

PRIMARY ROUTE(S) OF ENTRY

Inhalation (breathing), eye and skin contact.

Ingestion: May be harmful if swallowed.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Persons sensitized to acetic acid are at risk.

SYMPTOMS OF EXPOSURE

Skin Contact: May cause mild skin irritation.

Eye Contact: Causes eye irritation.

REPORTED AS CARCINOGEN OR POTENTIAL CARCINOGEN

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

Inhalation: May cause respiratory tract irritation, seen as soreness in throat, nose and respiratory tract. Breathing acetic acid vapors may cause asthma-like symptoms.

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.

Eye contact: Immediately rinse eyes with water. Remove any contact lenses, and continue flushing eyes with running water for at least 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eyes and lids with water. Get

immediate medical attention.

Inhalation: Remove from area to fresh air. If not breathing, give artificial respiration or use a bag-mask respirator. Get immediate medical attention. If victim is having trouble breathing, transport to medical care and, if available, give supplemental oxygen.

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 a unconscious or convulsing person.

NOTE TO PHYSICIAN

Inhalation - Delayed pulmonary edema may occur, and patient should be maintained under observation for this complication.

5. FIRE FIGHTING MEASURES

Flash Point and Method > 200 °F (closed cup)

GENERAL HAZARD

None known.

EXTINGUISHING MEDIA

In case of fire use foam, carbon dioxide (CO₂), or dry chemical.

SPECIAL FIREFIGHTING INSTRUCTIONS

None known.

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 or clothing. Absorb in kitty litter, dry

sand or earth and place into containers for disposal. Small spills may be flushed in sewers with plenty of water.

7. HANDLING AND STORAGE

HANDLING

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

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 contamination to permissible exposure level.

person for the specific work conditions.

Eye Protection: Wear approved safety glasses or goggles.

Gloves: Neoprene.

PERSONAL PROTECTION

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

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

Other: Eye wash; safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

State Liquid
Color Clear yellow
Odor Vanilla/acetic acid (vinegar)
Melting Point °F N/A
Boiling Point °F >212
Specific Gravity @ 25 °F 1.1

Vapor Density (Air = 1) 0.9
Vapor Pressure (mm Hg) N/D
pH 4.0 (1:9 dilution)
Water Solubility Soluble
Solubility in other liquids N/E

10. STABILITY AND REACTIVITY

REACTIVITY	HAZARDOUS DECOMPOSITION PRODUCTS
Stable	None known
INCOMPATIBILITIES	CONDITIONS TO AVOID
Alkaline materials and strong oxidizers	None known.

11. TOXICOLOGICAL INFORMATION

The product is not a skin irritant. The primary dermal irritation score was 0.17 following a 4-hour occluded dermal exposure in a modified FHSA/CPSC Design, 16 CFR 1500.	For Acetic acid: Inhalation LC ₅₀ (mouse): 5,260 ppm/1 hr. Oral LD ₅₀ (rat): 3,310 mg/kg Dermal LD ₅₀ (rabbit): 1,060 µL / kg
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12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION	ENVIRONMENTAL MOVEMENT AND PARTITIONING
For Acetic acid: 96 hr LC ₅₀ (fathead minnow): 88 mg/L. Conditions: Static, 18-22°C. 96 hr LC ₅₀ (bluegill sunfish): 75 mg/L. 24 hr LC ₅₀ (goldfish): 423 mg/L. EC ₅₀ (5, 15, 25 min) (<i>Photobacterium phosphoreum</i>): 8.86-11 mg/L Microtox test. Conditions: 15 °C. 24-48 hr EC ₅₀ (water flea): 32-47 mg/l	Not known.
	ENVIRONMENTAL FATE
	Not known.

13. DISPOSAL CONSIDERATIONS

RCRA Waste Code: Not regulated

14. TRANSPORT INFORMATION

DOT Hazard Class Not regulated	This product was not corrosive to steel or aluminum when tested according to 49 CFR 173.137.
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15. REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) <input checked="" type="checkbox"/> Hazardous <input type="checkbox"/> Non-Hazardous	SARA TOXIC CHEMICALS (40 CFR 372) N/A
CERCLA/SUPERFUND (40 CFR 117, 302) Acetic acid; reportable quantity - 5,000 lbs.	TSCA CHEMICAL SPECIFIC RULES N/A
SARA EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) N/A	INVENTORY STATUS All ingredients of this product are on the TSCA inventory.
SARA HAZARD CATEGORIES (40 CFR 370) <input checked="" type="checkbox"/> Acute <input checked="" type="checkbox"/> Chronic <input type="checkbox"/> Fire <input type="checkbox"/> Pressure <input type="checkbox"/> Reactive <input type="checkbox"/> None	

STATE REGULATIONS

Florida Hazardous Substance List Acetic acid
Massachusetts Right To Know List Acetic acid
Minnesota Hazardous Substance List Acetic acid
New Jersey Right To Know List Acetic acid

16. OTHER INFORMATION

NFPA RATING

Health 2
Fire 1
Reactivity 0

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

PREPARATION INFORMATION

Prepared by: Sprint Systems of Photography, Inc.
Date Prepared: July 10, 2000
Replaces: June 21, 2000

REVISION INFORMATION

Section 14 was revised to reflect the results of metal corrosion testing.



RECORD SPEED FIXER

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION		MANUFACTURER
Product Name	Record Speed Fixer	Sprint Systems of Photography, Inc.
Catalog Number	N/A	1057 Chopmist Hill Road
Chemical Name	Mixture	Scituate, RI 02857
Common Name	N/A	800 356-5073
Product Use	Fixes photographic film and paper.	EMERGENCY TELEPHONE NUMBER
		ChemTel (1-800-255-3924)

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS NUMBER	EXPOSURE CONTROLS	
		OSHA PEL	ACGIH TLV
Ammonium thiosulfate	7783-18-8	N/E	N/E
Boric acid	10043-35-3	N/E	N/E
Acetic acid	64-19-7	10 ppm	10 ppm (TWA) - 15 ppm (STEL)
Sodium sulfite	7757-83-7	N/E	N/E
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 yellowish liquid with a slight banana odor.	and respiratory tract.
Warning! Contact may cause sensitization. Breathing acetic acid vapors may cause asthma. May cause life threatening asthma. May cause irritation to the eyes, skin,	In case of fire, extinguishing media suitable for the material that is burning.

POTENTIAL HEALTH EFFECTS

PRIMARY ROUTE(S) OF ENTRY	Eye Contact: Contact of product with eyes may irritate and burn eyes.
Inhalation (breathing), eye and skin contact.	Ingestion: May cause digestive tract irritation. May cause life threatening asthma.
SYMPTOMS OF EXPOSURE	MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Skin Contact: Prolonged or repeated contact may cause irritation, redness, cracking, and dermatitis. Contact may cause sensitization.	Persons sensitized to acetic acid, sodium metabisulfite or sodium sulfites are at risk.
Inhalation: Vapors may irritate the respiratory tract. Breathing acetic acid may cause asthma.	

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, 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. If victim is having trouble breathing, transport to medical care and, if available, give supplemental oxygen.

Eye contact: Rinse eyes 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

No information available.

5. FIRE FIGHTING MEASURES

Flash Point and Method > 200 °F (PMCC)

GENERAL HAZARD

Fire or excessive heat may produce hazardous decomposition products.

EXTINGUISHING MEDIA

In case of fire use extinguishing media suitable for the

material that is burning.

SPECIAL FIREFIGHTING INSTRUCTIONS

None known.

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 getting on clothing or skin or in eyes. Absorb in kitty litter, dry

sand or earth and place into containers for disposal.

7. HANDLING AND STORAGE

HANDLING

Wear appropriate protective equipment (See Section 8). Avoid getting on clothing or skin or in eyes. 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.

Eye Protection: Wear approved safety glasses or goggles.

Gloves: Butyl rubber.

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

Other: Eye wash; safety shower.

PERSONAL PROTECTION

Respirator: In conditions where high concentrations of vapors are present or exposure limits are exceeded, wear a respirator that has been selected by technically qualified person for the specific work conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

State	Liquid	Vapor Density (Air = 1)	N/A
Color	Light yellowish	Vapor Pressure (mm Hg)	Negligible
Odor	Slight banana	pH	6.0
Melting Point °F	N/A	Water Solubility	Soluble
Boiling Point °F	> 212	Solubility in other liquids	N/E
Specific Gravity @ 25 °F	1.35		

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, alkali materials.

HAZARDOUS DECOMPOSITION PRODUCTS

Ammonia, CO₂, CO, oxides of nitrogen and sulfur, hydrogen sulfide.

CONDITIONS TO AVOID

Excessive heat; acids or alkalies.

11. TOXICOLOGICAL INFORMATION

The product is not a skin irritant. The primary dermal irritation score was 0.17 following a 4-hour occluded dermal exposure in a modified FHSA/CPSC Design, 16 CFR 1500.

For Acetic acid:

Inhalation LC₅₀ (mouse): 5,260 ppm/1 hr
Oral LD₅₀ (rat): 3,310 mg/kg
Dermal LD₅₀ (rabbit): 1,060 µL/kg

For Ammonium thiosulfate:

Oral LD₅₀ (rat): 2,890 mg/kg
Oral LD₅₀ (mouse): 2,100 mg/kg

For Sodium sulfite:

Oral LD₅₀ (mouse): 820 mg/kg

For Sodium metaborate:

Oral LD₅₀ (rat): 2,330 mg/kg

For Boric acid:

Oral LD₅₀ (rat): 2,660 mg/kg
Oral LD₅₀ (mouse): 3,450 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.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION**For Acetic acid:**

96 hr LC₅₀ (fathead minnow): 88 mg/L. Cond: Static, 18-22 °C.;
96 hr LC₅₀ (bluegill sunfish): 75 mg/L.
24 hr LC₅₀ (goldfish): 423 mg/L.;
24-48 hr EC₅₀ (water flea): 32-47 mg/L.;
5, 15, 25 min EC₅₀ (*Photobacterium phosphoreum*):
8.86-11 mg/L Microtox test. Cond: 15 °C.

For Boric acid:

48 hr LC₅₀ (water flea): 115.0-153.0 mg/L. Cond: Static.

ENVIRONMENTAL MOVEMENT AND PARTITIONING

Not known.

ENVIRONMENTAL FATE

Not known.

13. DISPOSAL CONSIDERATIONS

RCRA Waste Code: Not regulated

14 **TRANSPORT INFORMATION**

DOT Proper Shipping Name Not regulated

15. **REGULATORY INFORMATION**

OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)

Hazardous Non-Hazardous

CERCLA/SUPERFUND (40 CFR 117, 302)

Acetic acid - RQ: 5,000 lbs.

SARA TOXIC CHEMICALS (40 CFR 372)

N/A

TSCA CHEMICAL SPECIFIC RULES

N/A

INVENTORY STATUS

All ingredients of this product are on the TSCA inventory.

SARA EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355)

N/A

SARA HAZARD CATEGORIES (40 CFR 370)

Acute Chronic Fire
 Pressure Reactive None

STATE REGULATIONS

Florida Hazardous Substance List Acetic acid and sodium metabisulfite

Massachusetts Right To Know List Acetic acid and ammonium thiosulfate, and sodium metabisulfite

Minnesota Hazardous Substance List Acetic acid and sodium metabisulfite

New Jersey Right To Know List Acetic acid and ammonium thiosulfate, and sodium metabisulfite

Rhode Island Hazardous Substance List..... Acetic acid, Sodium metabisulfite

16. **OTHER INFORMATION**

NFPA RATING

Health 2
Fire 1
Reactivity 0

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

PREPARATION INFORMATION

Prepared by: Sprint Systems of Photography, Inc.
Date Prepared: June 21, 2000
Replaces: November 10, 1999

REVISION INFORMATION

Sections 11 and 16 were updated to reflect results of a dermal irritation study.

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION

Product Name Archive Fixer Remover
 Catalog Number N/A
 Chemical Name Mixture
 Common Name N/A
 Product Use Remove photographic fixer.

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
Ethylene glycol	107-21-1	N/E	100 mg/m ³ (aerosol)
Potassium salts of diethylenetriamine-pentaacetic acid	Mixture	N/E	N/E
Sodium metabisulfite	7681-57-4	N/E	5 mg/m ³
Sodium sulfite	7757-83-7	N/E	N/E
Water	7732-18-5	N/E	N/E

See Section 15 for OSHA Regulatory Status.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Blue to moss green solution with a slight sulfur dioxide odor.

absorbed through skin. May cause life threatening asthma.

Warning! May cause skin sensitization. May cause mild irritation to skin, eyes, and the respiratory tract. May be

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

embryo or cause teratogenic effects. Can cause life-threatening asthma.

SYMPTOMS OF EXPOSURE

Skin Contact: May cause mild irritation. May be absorbed through skin and cause symptoms like those for ingestion of ethylene glycol. May cause skin sensitization.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

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

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

REPORTED AS CARCINOGEN OR POTENTIAL CARCINOGEN

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

Eye Contact: May cause mild irritation.

Ingestion: Can cause kidney damage, and may be toxic to the

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. If not breathing, clear airway and start mouth-to-mouth artificial respiration or use a bag- mask respirator. Get immediate medical attention. If victim is having trouble breathing, transport to medical care and, if available, give supplemental oxygen.

Eye contact: Rinse eyes 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

GENERAL HAZARD

Fire or excessive heat may produce hazardous decomposition products.

EXTINGUISHING MEDIA

In case of fire use extinguishing media suitable for the

material that is burning.

SPECIAL FIREFIGHTING INSTRUCTIONS

None known.

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, or 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, or 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 contamination to permissible exposure level.

Eye Protection: Wear approved safety glasses.

Gloves: Butyl rubber.

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

Other: Eye wash; safety shower.

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 qualified person for the specific work conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

State Liquid
Color Blue to moss green
Odor Sulfur dioxide

Melting Point °F N/A
Boiling Point °F > 212
Specific Gravity @ 25 °F 1.29

Vapor Density (Air = 1) N/A
Vapor Pressure (mm Hg) N/A
pH 7.9

Water Solubility Soluble
Solubility in other liquids N/A

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.

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 0.3 following a 4-hour occluded dermal exposure in a modified FHSA/CPSC Design, 16 CFR 1500.

For Sodium sulfite:

Oral DC₅₀ (rat): 820 mg/kg

For Ethylene glycol:

Inhalation LC₅₀ (rat): 10,876 mg/kg

Oral LD₅₀ (rat): 4,700 mg/kg

Oral LC₅₀ (mouse): 5,500 mg/kg

Dermal LC₅₀ (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.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION**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

48 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)**

N/A

SARA TOXIC CHEMICALS (40 CFR 372)

Ethylene glycol (2-9%)

TSCA CHEMICAL SPECIFIC RULES

None known.

STATE REGULATIONS

California Proposition 65 Warning! This product contains formaldehyde a chemical known to the State of California to cause cancer.

Florida Hazardous Substance List Sodium metabisulfite, and ethylene glycol.

SARA EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355)

N/A

SARA HAZARD CATEGORIES (40 CFR 370)

Acute Chronic Fire
 Pressure Reactive None

INVENTORY STATUS

All ingredients of this product are on the TSCA inventory.

Massachusetts Right To Know List Formaldehyde, sodium metabisulfite, and ethylene glycol

Minnesota Hazardous Substance List Sodium metabisulfite, and ethylene glycol

New Jersey Right To Know List Sodium metabisulfite, and ethylene glycol

Rhode Island Hazardous Substance List: Sodium metabisulfite, and ethylene glycol

16.**OTHER INFORMATION****NFPA RATING**

Health 2
Fire 1
Reactivity 0

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

PREPARATION INFORMATION

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

REVISION INFORMATION

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



END RUN WETTING AGENT

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION

Product Name End Run Wetting Agent & Stabilizer
 Catalog Number N/A
 Chemical Name Mixture
 Common Name N/A
 Product Use Emulsion stabilizer; protect against static charge.

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
Polyether	Proprietary	N/E	N/E
Isopropyl alcohol	67-63-0	400 ppm TWA	200 ppm TWA; 400 ppm STEL
Water	7732-18-5	N/E	N/E

See Section 15 for OSHA Regulatory Status

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

For product as sold: Clear liquid with a rubbing alcohol odor.	(CO ₂), or dry chemical.
Warning! Flammable liquid and vapor. Causes eye irritation. May cause irritation to skin, eyes, and respiratory tract. Overexposure to isopropanol vapors may cause central nervous system depression.	For diluted product as used: Clear liquid with a slight alcohol odor.
In case of fire use water fog, "alcohol" foam, carbon dioxide	May cause eye and skin irritation.
	May flash, but will not sustain combustion.

POTENTIAL HEALTH EFFECTS

PRIMARY ROUTE(S) OF ENTRY

Inhalation (breathing), eye and skin contact.

central nervous system depression; symptoms include headache, dizziness, nausea, vomiting. Severe overexposure can cause unconsciousness or death.

SYMPTOMS OF EXPOSURE

For product as sold:

Skin Contact: Repeated or prolonged skin contact may cause dryness, reddening, itching and inflammation. May cause skin irritation and sensitization.

Ingestion: May cause digestive tract irritation and symptoms similar to those listed for inhalation.

Eye Contact: Direct contact causes severe irritation and pain.

For diluted product as used:

May cause mild eye and skin irritation. May cause skin sensitization.

Inhalation: May irritate the respiratory tract and mucous membranes. Overexposure to isopropanol vapors may cause

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Persons sensitized to isopropyl alcohol 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.

Eye contact: Immediately rinse eyes with water. Remove any contact lenses, and continue flushing eyes with running water for at least 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eyes and lids with water. Get immediate medical attention.

Inhalation: Remove from area to fresh air. Seek medical attention if respiratory irritation develops or if breathing becomes difficult.

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

Symptomatic and supportive treatment is generally all that is needed. Metabolism of isopropanol forms acetone which may be detected in the serum and urine. Determine the isopropanol concentration in the serum and monitor for acidosis and hypoglycemia. Gastric lavage may be effective if performed soon after oral ingestion, in patients who are comatose, or patients at the risk of convulsing.

5. FIRE FIGHTING MEASURES

Flash Point and Method 80 °F (closed cup) - as sold.

(CO₂), or dry chemical.

GENERAL HAZARD

Fire or excessive heat may produce hazardous decomposition products.

SPECIAL FIREFIGHTING INSTRUCTIONS

None known.

EXTINGUISHING MEDIA

In case of fire use water fog, "alcohol" foam, carbon dioxide

FIREFIGHTING EQUIPMENT

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

6. ACCIDENTAL RELEASE MEASURES

For product as sold:

Wear appropriate protective equipment (See Section 8).

For product as used:

May be flushed into sewer.

Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate area of leak or spill. Absorb with kitty litter, sand or earth package in a suitable container for disposal. Use a plastic broom and shovel when collecting spilled material.

7. HANDLING AND STORAGE

HANDLING

Wear appropriate protective equipment (See Section 8). Keep away from heat, sparks and open flame.

STORAGE

Keep away from heat, sparks and open flame. Keep in a tightly closed container, stored in a cool, dry, ventilated area. Flammable liquid storage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS

Use local and/or general exhaust to reduce air contamination to permissible exposure level.

PERSONAL PROTECTION

Respirator: In conditions where high concentrations of vapors are present or exposure limits are exceeded, wear a

respirator that has been selected by technically qualified person for the specific work conditions.

Eye Protection: Wear approved safety goggles.

Gloves: Neoprene.

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

Other: Eye wash; safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

State	Liquid	Vapor Density (Air = 1)	N/A
Color	Clear	Vapor Pressure (mm Hg)	28 mm (Calculated)
Odor	Pungent	pH	6.7
Melting Point °F	N/A	Water Solubility	Soluble
Boiling Point °F	147	Solubility in other liquids	N/E
Specific Gravity @ 25 °F	0.95		

10. STABILITY AND REACTIVITY

REACTIVITY

Stable

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon dioxide; carbon monoxide.

INCOMPATIBILITIES

Strong oxidizers.

CONDITIONS TO AVOID

Spark, flame, heat, aluminum containers above 120 °F

11. TOXICOLOGICAL INFORMATION

The product is not a skin irritant. The primary dermal irritation score was 0.92 following a 4-hour occluded dermal exposure in a modified FHSA/CPSC Design, 16 CFR 1500.

For Isopropyl alcohol:

Inhalation LC₅₀ (rat): 1,600 ppm/8 hr
Oral LD₅₀ (rat): 5,045 mg/kg
Oral LD₅₀ (mouse): 3,600 mg/kg
Dermal LD₅₀ (rabbit): 12,800 mg/kg

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION**For Isopropyl alcohol:**

96 hr LC₅₀ (fathead minnow; 29 days old): 94,900-10,400 mg/L. Cond: Flow-through, 24.4-24.6 °C, pH 7.09, 52.5 mg/L CaCO₃
96 hr LC₅₀ (fathead minnow; 31 days old): 61,200-65,500 mg/L. Cond: Flow-through, 24.6 °C, pH 7.87, 44 CaCO₃
5 min EC₅₀ (*Photobacterium phosphoreum*): 35,390 mg/L Microtox test.

ENVIRONMENTAL MOVEMENT AND PARTITIONING

Not known.

ENVIRONMENTAL FATE

Not known.

13. DISPOSAL CONSIDERATIONS

For product as sold:

RCRA Waste Code: D001.

For product as used:

RCRA Waste Code: Not regulated.

14. TRANSPORT INFORMATION

For 1 L containers:

DOT Proper Shipping Name: Consumer commodity
DOT Hazard Class ORM-D
DOT I.D. Number N/A
Packing Group N/A
Marking ORM-D
NAERG Guide No. N/A

15. REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)

Hazardous Non-Hazardous

CERCLA/SUPERFUND (40 CFR 117, 302)

N/A

SARA EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355)

N/A

SARA HAZARD CATEGORIES (40 CFR 370)

Acute Chronic Fire
 Pressure Reactive None

STATE REGULATIONS

California Proposition 65 Warning! This product contains formaldehyde a chemical known to the State of California to cause cancer.

SARA TOXIC CHEMICALS (40 CFR 372)

Isopropyl alcohol - 30 - 40%

TSCA CHEMICAL SPECIFIC RULES

Isopropyl alcohol - Section 12(b)-Export Notification

INVENTORY STATUS

All ingredients of this product are on the TSCA inventory.

16. OTHER INFORMATION

NFPA RATING

Health 2
Fire 3
Reactivity 1

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

PREPARATION INFORMATION

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REVISION INFORMATION

Sections 11 and 16 were updated to reflect results of a dermal irritation study.