

College at Oneonta

Safety and Disposal Guidelines for the use of Photographic Chemicals

I. Introduction

Both Federal and State government agencies regulate the handling and disposal of photographic chemicals. These agencies are the Environmental Protection Agency (EPA), The New York Department of Environmental Conservation (DEC) and the Occupational Safety and Health Administration (OSHA). These guidelines address the different types of photo chemicals encountered in the darkroom and provide information on proper safety procedures.

There are many hazards associated with photographic chemicals. It is important that personnel involved with photo processing be aware of these hazards and that every effort is made to minimize exposure to these chemicals and to ensure proper disposal. Familiarize yourself with hazards of photo chemicals by reading Material Safety Data Sheets (MSDS) before use. When using any photo chemical, the following safety procedures should always be observed:

- MSDS's for chemicals must be readily available in your area.
- An eyewash fountain is available at sink where photo chemicals are used or mixed due to their corrosive and/or toxic properties. In case of eye or skin contact, rinse for at least 15-20 minutes. Sink is located in room where dryer is located.
- Ensure the dark room has adequate ventilation. At least, 10 air changes per hour.
- Wear appropriate Personal Protective Equipment i.e. gloves, goggles, and aprons.
- Cover or close all solutions when not in use to suppress toxic vapors and gases.
- Keep darkroom uncluttered.
- Wet and dry areas should be clearly separated.
- Store chemicals compatibility.
- Do not eat, drink or smoke in the storage areas, darkroom or studio.
- Wash hands with soap and water after working with photographic chemicals
- Label all containers of photo chemicals.

II. Developers- Collected

Developer solutions and powders are often alkaline with moderate to high toxicity. They are also sources of the most common health problems in photography; skin disorders and allergies. Developers are skin and eye irritants and many are strong allergic sensitizers. Some common ingredients in developers are:

- Hydroquinone
- Sodium sulfite
- Monomethyl para-aminophenol sulfate
- Phenidone

Precautions

- Avoid using developers containing para-phenylene diamine or diaminophenol hydrochloride (amidol)
- Also avoid using toxic developers such as pyrogallol and catechol.
- Phenidone makes a good substitute

- Insure good ventilation
- Wear gloves and goggles
- If a splash occurs, flush affected area (15-20 minutes for eyes) immediately with water using eyewash or safety shower.
- Cover or close all solutions when not in use.

Disposal

Spent and un-used developer should be **collected and containerized with a Hazardous Waste Label** call Facilities 3224 when the container is $\frac{3}{4}$ full for pickup

III. Stop Baths- Flushed

Stop baths are acidic and can cause dermatitis; skin ulceration and can severely irritate the respiratory system. Contamination of the stop bath by developer components can increase inhalation hazards. Common ingredients in stop baths include:

-Acetic acid (dilute or concentrated)

-Potassium chrome alum sometimes used as a stop hardener contains chromium, a possible carcinogen that can also cause skin and nasal irritation, ulceration and allergies.

Precautions

- Purchase dilute solutions of acetic acid rather than concentrated ones. Use a water rinse step between developer and stop bath to reduce the formation of sulfur dioxide gas.
- Always add acid to water when diluting
- Ensure good ventilation
- Wear gloves and goggles
- If a splash occurs, flush affected area (15-20 minutes for eyes) immediately with water using eyewash or safety shower.
- Cover or close all solutions when not in use

Disposal

Spent Stop Bath should be flushed down the drain with large quantities of water to the sanitary sewer system.

Un-used/concentrated solutions of Stop Bath or solutions containing potassium chrome alum - should be left in the containers, labeled as Hazardous Waste, and disposed of by Facilities. Call Facilities 3224 for pick up and disposal.

IV. Fixer- Collected

Fixer solutions slowly release sulfur dioxide gas as they age. However, when these solutions are contaminated with acid from the stop bath, the sulfur dioxide gas is released at a more rapid rate. Common ingredients in Fixer solutions include:

-Sodium thiosulfate

-Sodium sulfite

-Sodium bisulfite

-Potassium aluminum sulfate

-Boric acid

Precautions

- Ensure good ventilation
- Wear gloves and goggles

- If a splash occurs, flush affected area (15-20 minutes for eyes) immediately with water using eyewash or safety shower.
- Cover or close all solutions when not in use

Disposal

Spent fixer, due to the photographic paper releasing silver into solution, **should be collected and containerized with a Hazardous Waste Label.**

Call Facilities 3224 for pickup when container is $\frac{3}{4}$ full.

Any un-used fixer can be collected along with the spent fixer.