

ETHIDIUM BROMIDE DISPOSAL

This guide is intended for the following audiences:

Labs	Dental	Art	Podiatry	Maintenance	Office	Healthcare	Dining	Housing	Misc. University Departments
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Please contact EHRS at 215-707-2520 for additional disposal guidance information.

INTRODUCTION:

Ethidium bromide is commonly used in laboratories to visualize DNA or RNA during or after electrophoresis. Ethidium bromide is handled at Temple University as a chemical waste even though it is not regulated by EPA as a hazardous waste.

Ethidium bromide has mutagenic properties that may present a hazard if it is poured down the drain untreated (filtered) or placed in the trash.

WASTE MINIMIZATION:

A concerted effort must be made to minimize all waste streams at Temple University as part of our waste minimization program. The following are some examples of waste minimization techniques:

- Switching to less toxic alternatives to Ethidium bromide.

COMPANY NAME	PROUDUCT INFO	WEB PAGE
Invitrogen	SYBR Safe DNA Gel Stain (Product # S37100)	www.invitrogen.com

- Use dilute rather than concentrated solutions
- Use micro- or semi-micro techniques.

ETHIDIUM BROMIDE SOLUTIONS:

- **Solutions containing heavy metals, organics, cyanides or sulfides or other hazardous chemicals or materials.**
 - Collect in an appropriately sized container. EHRS can supply a five gallon carboy waste container. The container cap must be closed securely when the container is not in use.
 - Label with a Hazardous Waste Label. Identify all constituents on the label with the approximate percent.

- Request a pickup-Complete a [Pickup Request Form](#) under the Chemical Waste section and submit electronically(E-mail request) or fax to 2-1600
 - Solutions of this type are classified as a Hazardous Waste and are not a candidate for treatment (filtration/deactivation) or allowed to be released down the drain.
- **Stock Solutions/Buffer Solutions < 10µg/ml concentration**
 - Solutions containing <10µg/ml may be poured down the drain with copious amounts of water.
 - EHRS strongly recommends that all solutions be filtered prior to releasing to the drain.
- **Stock Solutions/Buffer Solutions ≥10µg/ml concentration**
 - Solutions containing ≥10µg/ml may be filtered for disposal as outlined below or they must be treated as chemical waste and processed through EHRS.
 - Treated as Chemical Waste.
 - Collect in an appropriately sized container. EHRS can supply a five gallon carboy waste container. The container cap must be closed securely when the container is not in use.
 - Label as Ethidium Bromide (Mutagen) Waste-Liquid.
 - Request a pickup-Complete a [Pickup Request Form](#) under the Chemical Waste section and submit electronically(E-mail request) or fax to 2-1600
- **Filtrations of Solutions**
 - The filtration of Ethidium bromide solutions, free of other contaminants, through activated charcoal or ion exchange resin is a safe and acceptable means of disposal.
 - Filter the solution through the activated charcoal or ion exchange resin. The activated charcoal or ion exchange resin will collect the Ethidium bromide.
 - Discharge the filtered solution to the drain with copious amounts of water.
 - Place the used filter cartridge/resin into a sealable plastic zip lock bag and dispose of as described below under Ethidium Bromide Contaminated Solid Waste.
 - Commercially available kits (see below) are available. Follow the manufacturer's instructions for proper use and ensure the media is replenished as necessary to ensure effectiveness.

COMPANY NAME	PROUDUCT INFO	WEB PAGE
Amresco, Inc.	Destaining bags (Product # E732)	www.amresco-inc.com
BD Biosciences- Clontech	BondEX Ethidium Bromide & SYR Green Detoxification Cartridges (Product # 74071)	www.clontech.com
Qbiogene	Green Bag (Product # 2350-200)	www.qbiogene.com
VWR International	Extractor Waste Reduction System (Product # 28165-500)	www.vwrsp.com

ETHIDIUM BROMIDE CONTAMINATED SOLID WASTE:

- **Gels -trace amounts ($\leq 1\%$) of Ethidium Bromide**
 - Place gels into a sealable plastic bag
 - May be discarded into the regular trash
- **All other solid waste (gels $>1\%$, crystals, powders, filters/cartridges, contaminated debris(gloves, spill clean up, tubes, towels, etc..))-Non-Sharps**
 - Place contaminated items into a plastic container or pail that is lined with a 6-mil plastic bag or into a double sealable plastic zip lock bag.
 - The container must be closed when not in use.
 - Tie or seal the container/pail or bag once full.
 - Label as Ethidium Bromide (Mutagen) Waste-Solid.
 - Request a pickup-Complete a [Pickup Request Form](#) under the Chemical Waste section and submit electronically(E-mail request) or fax to 2-1600
- **Sharps-Needle/Syringes-Contaminated with Ethidium bromide (Non-Infectious/biological)**
 - Place all items into a puncture proof sharps container. Do not utilize a red infectious/biohazardous waste sharp container. EHRS can supply alternative sharp containers.
 - The container must be closed when not in use
 - Close and seal the sharps container once full.
 - Label as Ethidium Bromide (Mutagen) Waste-Sharps.
 - Request a pickup-Complete a [Pickup Request Form](#) under the Chemical Waste section and submit electronically(E-mail request) or fax to 2-1600

- **Sharps-Others (slides, broken glass, pipette tips etc.)- Contaminated with Ethidium bromide (Non Infectious/biological)**
 - Place all items into a plastic lined broken glass box or any hard walled puncture resistant container.
 - The container must be closed when not in use
 - Close and seal the container once full.
 - Label as Ethidium Bromide (Mutagen) Waste-Sharps-Others.
 - Request a pickup-Complete a [Pickup Request Form](#) under the Chemical Waste section and submit electronically(E-mail request) or fax to 2-1600

ETHIDIUM BROMIDE WASTE THAT MAY ALSO BE POTENTIALLY INFECTIOUS/BIOLOGICAL:

These wastes must be disposed of through the Infectious/Biohazardous waste program. The waste must be collected into appropriate infectious/biohazardous waste boxes or containers. Ethidium bromide is not deactivated or destroyed by autoclaving. All Ethidium bromide waste in this category must be sent out for incineration. Refer to the following policies for additional information:

- [EHRS Handbook-2.3-Infectious and Biological Waste Policy](#)
- [EHRS Handbook-2.4-Management of Infectious or Biological Waste](#)

TRAINING

Any employee who handles Ethidium bromide waste is required to have initial and annual refresher chemical waste training. All new employees are required to have their initial training within 30 days of their initial employment date. Please visit the EHRS [EHRS training page](#) or contact the Training Program Coordinator at 215-707-2520 for additional information

SUPPLIES:

Collection Containers: Contact EHRS at 215-707-2520 for information and availability.

Secondary Containment: Contact EHRS at 215-707-2520 for information and availability.

Labels: Contact EHRS at 215-707-2520 for information and availability.

It is the individuals department's responsibility for supplying labels, collection containers, pallets or secondary containment if the type (s) or size(s) needed are not available through EHRS. All items must meet the regulatory requirements as specified by the EPA and DOT. Please contact EHRS at 215-707-2520 for guidance.

DISPOSAL INSTRUCTIONS:

1. All waste containers must be closed and sealed.
2. All waste containers must be properly labeled as defined in category sections above.
3. Request a pickup-Complete a [Pickup Request Form](#) under the Chemical Waste section and submit electronically(E-mail request) or fax to 2-1600

Related Information

[Contact EHRS](#)

Phone: 2-2520 or 215-707-2520 (off campus)

[Waste Pickup](#) (to request a pickup)