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ETHIDIUM BROMIDE DISPOSAL (LIQUIDS AND GELS) GUIDELINES

Ethidium bromide (EtBr) is a potentially mutagenic compound. Although not specifically defined as an Environmental Protection Agency (EPA) hazardous waste, appropriate disposal procedures must be followed.

Unused stock solutions:

- Must be received by the Environmental Health and Safety Office (EHSO) for redistribution or disposal
- Include as a line item on [Chemical Disposal Inventory Form](#)
- No additional labeling is necessary if the original container label is present and legible.

Buffered solutions:

- Unfiltered solutions must be collected for disposal through EHSO
- Attach a [Chemical Waste Label](#) and include as a line item on the [Chemical Disposal Inventory Form](#).

Alternatively, it is recommended that labs filter solutions with a commercially available EtBr filter kit. Users must verify that filtration was effective by using UV light. If the solution does not fluoresce, the filtered solution may be disposed of down the drain. Two filtration systems are commercially available - Charcoal filtration and Green Bag filtration.

Ethidium Bromide Solutions

- Aqueous solutions containing <10ug/ml ethidium bromide can be released to the drain.
- Aqueous solutions containing >10ug/ml ethidium bromide should be filtered or deactivated using one of the methods described below.

NOTE: EHSO recommends charcoal filtration

Charcoal Filtration:

Filtering the aqueous ethidium bromide waste solutions, free of other contaminants, through a bed of activated charcoal is a relatively simple and effective method for removal of ethidium bromide. **The filtrate may be poured down the drain.**

There are **two simple kits** available for charcoal filtration:

1. Funnel Kit

Schleicher and Schuell supply a commercial filter funnel kit that uses a packaged charcoal disk that is graduated for easily tracking the amount of aqueous solution calculated for fixed quantities of ethidium bromide residue. This is particularly useful for labs that generate large amounts of solutions at a time. The kit is available through [Schleicher and Schuell](#) or [VWR](#).

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Filter the ethidium bromide solution through the charcoal filter. Pour filtrate down the drain. Place charcoal filter in a sealed bag (e.g., zip-lock) and dispose as solid chemical waste.

2. **The Green Bag**

Another simple charcoal filtration method is the Green Bag, manufactured by BIO 101. The Green Bag® Kit allows rapid and trouble-free concentration of ethidium bromide from large volumes of solutions into a small "tea" bag containing activated carbon which is then conveniently disposed along with other solid hazardous wastes. One kit has the capacity to remove 500 mg of ethidium bromide from solutions (10mg EtBr/bag).



- Place the Green Bag into the ethidium bromide solution.
- Allow to sit for the allotted time.
- Pour filtrate down the drain.
- Dispose of the Green bag as solid chemical waste.

Green Bags are available through BIO101 (<http://www.bio101.com/>) or through VWR (<http://www.vwr.com/> - this is a non-catalog item - use #BIO101 22350-200).

1. **Charcoal Filters/Disks:** Used or unused charcoal filters for filtering ethidium bromide must be received by EHSO for disposal. Please package in a secondary container and attach a [Chemical Waste Label](#) and include as a line item on the [Chemical Disposal Form](#). DO NOT pack these filters with your gel waste.
2. **Gels:** Agar gels contaminated with EtBr are not considered a biohazard waste, but rather a chemical waste, and should be collected for disposal with EHSO. Allow excess free liquid to drip into your EtBr liquid waste container or absorb with a paper towel prior to packaging. Please double bag gels in a thick, clear, plastic bag. Do not use a biohazard or autoclave bag. Bags of ethidium bromide gels should be stored in a sturdy, leak proof secondary container in the lab. Please attach a [Chemical Waste Label](#) to both the bag and secondary container and include as a line item on the [Chemical Disposal Form](#). The secondary container should be used to transport the gels to EHSO, but the container will be returned upon removing the gels.
3. **Contaminated paper towels, tips, etc:** Materials contaminated with stock solutions and/or saturated with buffered solutions, such as wet paper towels, should be collected for disposal with EHSO. These materials may be combined with your gel waste.