Ethidium Bromide Waste Disposal

Ethidium bromide (EtBr) is toxic and ***cannot*** be disposed of with regular trash. It ***cannot*** be flushed down the drain unless it is first treated (***see instructions below for Destruction of EtBr***) for guidance. If untreated, the Department of Environmental Health and Safety (EH&S) Support Facility will manage it as hazardous chemical waste and ship it out with our hazardous waste vendor.

DO NOT put EtBr waste in red bags (biohazard bags), it is not a Medical Waste. EH&S Support Facility has been receiving ethidium bromide waste in red bags. UAB's hazardous waste vendor will ***not*** take any waste packaged in red bags for disposal and **UAB has no alternative disposal option for this waste stream.**

Therefore, the laboratories that produce EtBr waste must package it for disposal in the same manner that other hazardous/chemical waste is packaged to avoid it being rejected (***refer to the directions below***).

If you have any questions regarding this topic, please contact Hazardous Material Manager at the EH&S Support Facility at 205-934-3797 or Chemical Hygiene Officer at 205-934-4798.

Disposal Methods

1. Ethidium bromide solutions, spent filters, and gels should be collected and manifested as hazardous waste and picked up by the EH&S Support Facility Personnel. The waste code for ethidium bromide is 10TX - (Toxic).
2. Filtering EtBr using Commercially available filters
   - Commercially Available Filtration Kits are designed to filter buffer solutions through a bed of activated carbon as a simple and effective method for the removal of EtBr. The filtrate can then be drained and disposed of. One such kit is the EtBr GreenBag Disposal Kit available from Thomas Scientific or other vendors.
   - The Green Bag is essentially a charcoal "teabag" and if placed in the EtBr solution overnight could remove up to 10 mg EtBr/bag. One kit (50 bags) has the capacity to remove 500 mg of EtBr. After the solution has been treated, it may be poured down the drain and the bag can be disposed of as hazardous waste through EH&S.

3. The Lunn and Sansone technique listed below can be used to neutralize EtBr. ***Bleach neutralization is <u>not</u> an approved method.***

Lunn and Sansone Technique

Required reagents:

- 5% hypophosphorous acid
- 0.5M sodium nitrate solution
- Sodium bicarbonate
- pH paper

Personnel observing general laboratory safety precautions and wearing appropriate personal protective clothing should carry out the following steps in a fume hood.

1. Dilute solutions containing EtBr to a concentration of less than 0.05% w/v (50 mg/100 ml).
2. For every 100 ml of EtBr solution, add 20 ml of fresh 5% hypophosphorous acid and 12 ml of fresh 0.5 M sodium nitrate solution. Check the pH of the solution to make sure it is less than
   3.0. Stir briefly.
3. Allow the solution to react for at least ***20 hours***, neutralize with sodium bicarbonate, and pour down the sanitary sewer.

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