

ETHIDIUM BROMIDE DISPOSAL

(For assistance, please contact EHS at (402) 472-4925, or visit our web site at <http://ehs.unl.edu/>)

Ethidium bromide (EtBr) is a strong mutagen that is regulated as a “special waste” when disposed. This SOP provides guidance on the various disposal for EtBr solids and liquids.

- **Unused EtBr** must be tagged for collection by EHS.
- **pH neutral, aqueous solutions containing less than or equal to 5 ppm (mg/L) EtBr** may be disposed via the sanitary sewer so long as the sink is connected to a Publicly Owned Treatment Works (POTW). All lab sinks on City and East Campus discharge to a POTW. However, sinks at Research and Extension Centers, farms, and other locations may not discharge to a POTW.
- **pH neutral, aqueous solutions containing greater than 5 ppm EtBr** may be discharged to the sanitary sewer following the Chemical Degradation Procedures listed below. However, aqueous solutions of EtBr containing heavy metals, organics, cyanides or sulfides, or other toxic constituents must be tagged for collection by EHS. Again, the sanitary sewer must discharge to a POTW.
- **Solutions of EtBr mixed with any amount of a solvent** must be tagged for collection by EHS.
- **EtBr mixed with a radioactive isotope** must be tagged for collection by EHS.
- **Gels containing EtBr** can be broken up, neutralized in accordance with the Chemical Degradation Procedures listed below and disposed to the sanitary sewer. The sanitary sewer must discharge to a POTW. Alternately, EtBr gels can be tagged for collection by EHS. If tagged for collection by EHS, dry the gels prior to the requested pickup. Containers must be non-leaking and 20 pounds or less.
- **Disposable consumables (i.e., gloves, pipette tips, etc.) that are minimally contaminated with EtBr** can be bagged and disposed in the regular garbage. For gross contamination, bag the residues and tag for collection by EHS, or rinse thoroughly and dispose as regular garbage.

Chemical Degradation Procedures for EtBr

For every 100 ml of EtBr solution, add 20 ml of 5% hypophosphorous acid solution and 12 ml 0.5 M sodium nitrite solution. Stir the mixture. After 20 hours, neutralize the solution with sodium bicarbonate. Note that upon adding sodium bicarbonate, the solution will foam as CO₂ gas is liberated. Dispose of the neutralized solution via the sanitary sewer serviced by a POTW.

For EtBr that is to be collected by EHS, see the SOP, **Hazardous/Radioactive Materials Collection Procedures**.