

Ethidium Bromide Disposal

Summary/Purpose: The Ethidium Bromide Disposal Policy details the minimum requirements and procedures to properly dispose of Ethidium Bromide Solutions and Gels.

Ethidium Bromide (EtBr) is a strong mutagen and a possible carcinogen or teratogen.

- When you work with EtBr, you must wear a lab coat, chemical splash goggles, and nitrile gloves.
- Always use caution when using an ultraviolet light while working with EtBr.
- Always use a chemical fume hood during processes that can generate EtBr dusts or mists.

Ethidium Bromide, unused

Collect for disposal by Laboratory Services

- **Aqueous solutions containing < 5 mg/L EtBr**
 - Dispose directly to the sanitary sewer.
- **Aqueous solutions containing > 5 mg/L EtBr** - *If the solutions contain no other Hazardous Materials (organics, salts, metals, etc.)*
 - For every 100 ml of EtBr solution add
 - 20 ml 5% hypo phosphorous acid solution and
 - 12 ml 0.5 M sodium nitrite solution.
 - Stir mixture and let sit for 20 hours
 - Neutralize with sodium bicarbonate
 - Dispose in the sanitary sewer (sink).
- **Solvents containing EtBr**
 - Collect for disposal by Laboratory Services.
- **Radioactive EtBr solutions**
 - Collect for disposal by Radiation Safety / Laboratory Services
- **Gels containing EtBr**
 - Break up Gels
 - Chemically degrade as noted above
 - Dispose to the sanitary sewer, or,
 - Dry Gels and Collect for disposal by Laboratory Services
- **Materials (gloves, pipettes, tips, etc.) used with EtBr**
 - Place in secure container (taped box with plastic bag liner) and place the container directly into a dumpster.
- **Commercially available products**, like the "Destaining Bags" produced by AMRESCO provide an alternative method of treatment for solutions.
 - The Destaining bags are simple and inexpensive.
 - Drop a Destaining bag into your solution,

- Periodically swirl it around a few times,
 - Let it stand overnight.
 - In the morning, remove the bag and collect for disposal by Laboratory Services.
 - Perform UV check of the solution. If it no longer fluoresces, pour the solution down the drain - provided no other hazardous chemicals are present.
- **Whenever possible, use a less hazardous chemical for the identification of DNA.**
 - Sigma-Aldrich produces a product called REDTAQ DNA Polymerase. It is an inert red tracer conjugated to a polymerase.
 - **Other EtBr disposal procedures should be avoided.**
 - The practice of oxidizing ethidium bromide with household bleach is inefficient and may produce additional hazardous compounds.