

Ethidium Bromide Waste Disposal

IUPUI is committed to the ideals of best lab practices, prompting pollution prevention, and reducing risks to the environment. Ethidium bromide has been found to be a strong mutagen. Waste Ethidium Bromide (Et Br) materials, including gels and contaminated debris, are collected EHS for disposal as a hazardous chemical waste.

EtBr gels have routinely been found to have high concentrations of EtBr and should be referred to EHS for collection and disposal. EtBr buffer solutions used for 40 to 60 minutes in electrophoresis procedures have been found to have negligible concentrations of EtBr and can be discarded by pouring down a lab sink followed by copious amounts of water. EtBr solutions used for a longer period of time or other applications should be referred to EHS for evaluation.

Contaminated debris such as paper towels, gloves, bench covers, etc., should be evaluated, and if found to be heavily contaminated, included with EtBr gel waste. Sharp items, such as pipette tips or test tubes, contaminated by EtBr should be kept in a separate container suitable for sharps and referred to EHS for final disposal.

Any EtBr waste contaminated with potentially infectious materials must be rendered non-infectious and referred to EHS for disposal and should not be placed in a biohazard container. Contact EHS at 274-4351 for additional guidance.



(Figure 1)

EHS requires the use leak-proof containers to handle the EtBr gels. Inexpensive, disposable, leak-proof containers such as those manufactured by Ziploc® (Figure 1) have been found to be acceptable for storage and transportation of EtBr gels. This container also is available in a rectangular 9 1/2 cup size (Figure 2). Any similar container is acceptable. Heavy gauge plastic bags are not acceptable because they have been found to present a significant potential for leakage.



(Figure 2)

There is an expressed concern for contamination of EtBr on laboratory work surfaces. The method recommended by EHS for decontamination is as follows: Wash the equipment once with a paper towel soaked in a decontamination solution consisting of 4.2g of sodium nitrite and 20ml of hypophosphorus acid (50%) in 300 ml of water. Make up the decontamination solution just prior to use. Then wash five times with water-soaked paper towels, using a fresh towel each time. If there is some concern that the decontamination solution is too corrosive (pH1.8), then use six water soaked towels. Soak all of the towels in decontamination solution for 1 hour. Check for completeness of surface decontamination by passing a UV light over the contaminated area while checking for illumination of EtBr. Glass, stainless steel, Formica, floor tile, and the filters of transilluminators have been successfully decontaminated using the technique.

Contact EHS at 274-2005 for additional information on EtBr disposal or decontamination procedures.