



Guidance Note

ETHIDIUM BROMIDE / VISUALIZING DYE DISPOSAL

May 2007

HWG-030

This information is for your use and as a way of providing consistent information. There is no response required.

ETHIDIUM BROMIDE / VISUALIZING DYE DISPOSAL

Background/Hazard

Ethidium bromide (Etbr) is widely used in research laboratories as a visualizing agent for nucleic acids. Etbr is considered a mutagen because it binds readily to DNA. Although Etbr is not a regulated hazardous waste, the waste products must be handled in a responsible manner to prevent unnecessary exposures. For example, agarose gels containing Etbr tend to be in the aqueous state, therefore they should be collected inside plastic containers to control leakage and spills.

There are other visualizing dyes (Hoechst dye, propidium iodide, etc.) that are used in molecular biology laboratories that are also mutagenic and they should also be handled with care. Collect all other dyes that bind to DNA according to the guidelines given below developed for Etbr. Laboratory procedures that may generate mists or aerosols of Etbr should be performed inside a well functioning chemical fume hood to minimize personnel exposures.

Gloves must be worn while handling Etbr gels and other visualizing dyes to prevent skin contact.

Waste Disposal Guidance

Aqueous Ethidium Bromide (ETBR) Stock Solutions

Collect all stock solutions of ethidium bromide (Etbr) and dispose of them through EH&S as regular chemical waste (submit chemical waste disposal form). Collect Etbr liquid waste in an empty bottle that has a tight screw on lid. Label the bottle of Etbr waste with an estimate of the concentration of the ethidium bromide present in micrograms per liter (use UCDHSC Chemical Waste Label).

Solid ETBR

Dispose of solid Etbr (original stock material) through EH&S as regular chemical waste (submit chemical waste disposal form).

Sewer Disposal of Dilute Aqueous ETBR Solutions

Aqueous solutions of Etbr which contain less than 1 microgram per milliliter (ug/ml) may be disposed down the sanitary sewer.

Wear gloves when pouring dilute Etbr solutions down the drain and use care to minimize your personal exposure. Let the water run for 1-2 minutes to flush the Etbr from the sink trap before turning off the faucet. Remember that Etbr solutions that contain organic solvents, heavy metals, cyanides or sulfides cannot be discharged into the sanitary sewer regardless of the Etbr concentration. All aqueous solutions of ethidium bromide that contain greater than 1 microgram per milliliter must be collected for proper disposal through

EH&S.

Agarose Gels Containing ETBR

Collect agarose gels containing Etbr inside plastic buckets to prevent the liquids from leaching out and causing contamination problems. Dispose of buckets of agarose gels containing Etbr through EH&S as regular chemical waste (submit chemical waste disposal form).

Syringes, Needles and Pasteur Pipettes Contaminated With ETBR

Dispose of syringes, needles, and Pasteur pipettes that were used to transfer Etbr into red plastic needle buckets. Needle buckets for sharps may be purchased from laboratory suppliers or from UCDHSC Materials Management. Full needle buckets must be sealed and then placed into the infectious waste stream (red bag) for final disposal.

Solid Debris Trace Contaminated With ETBR

Dry solid waste that is trace contaminated with Etbr will be collected inside plastic buckets or plastic bags. This waste includes gloves, paper towels, wipes, plastic pipettes and other debris contaminated with Etbr. There must not be any freestanding liquids in the waste container holding solid debris contaminated with Etbr. Dispose of all solid waste trace contaminated with Etbr through EH&S as regular chemical waste (submit chemical waste disposal form).

Centrifuge Tubes Contaminated With ETBR

Collect all centrifuge tubes that contain Etbr in leak proof plastic containers which have a secure lid (e.g., use same container as agarose Etbr gels). Collect centrifuge tubes containing Etbr by themselves. Do not discard any other type of waste into these waste containers. You should consider wearing two pairs of disposable gloves when handling pierced tubes to protect your skin from exposure. Dispose of centrifuge tubes of Etbr through EH&S as regular chemical waste (submit chemical waste disposal form).