



Ethidium Bromide Treatment and Disposal

Ethidium bromide is a commonly used stain for identifying nucleic acids in electrophoresis gels. It is known to be toxic and mutagenic and may be fatal if swallowed and harmful if inhaled or absorbed through the skin.

Before working with a chemical, know all of the potential hazards and safety precautions by reviewing the material safety data sheet (MSDS). Always wear personal protective equipment including gloves, goggles and a lab coat when working with ethidium bromide. Also, protect yourself from any UV sources that you may use when visually inspecting for ethidium bromide.

Waste Management Procedures

Gels, filters, and other solids containing ethidium bromide *must* be managed as a hazardous chemical waste and disposed of through EH&S. The waste must be double bagged, labeled with an EH&S hazardous waste label and placed in secondary containment. Do not use a biohazardous waste bag to package ethidium bromide waste.

Ethidium bromide solutions *cannot* be disposed of down the sanitary sewer. Ethidium bromide solutions must be treated as part of the experimental protocol or managed as a hazardous chemical waste and disposed of through EH&S.

Charcoal filtration treatment is a simple and effective method for removing ethidium bromide from electrophoresis buffers through a bed of activated charcoal. Prior to drain disposal of the filtered non-hazardous solution, check for fluorescence by using a UV light to ensure complete removal of the ethidium bromide. You can build your own filter or purchase one. When the filter is saturated, the charcoal must be managed as a hazardous chemical waste and disposed of through EH&S.



Charcoal filtration treatment of ethidium bromide solutions must follow the steps outlined in AB966 Benchtop Treatment:

- The laboratory hazardous waste treated is less than 5 gallons or 18 kg per batch whichever is greater.
- The laboratory hazardous waste is treated at the point of generation.
- Treatment is conducted within 10 calendar days of accumulation.
- The person performing the treatment has knowledge of the laboratory hazardous waste being treated, including knowledge of the procedure that generated the waste, and has received hazardous waste training.

Please note that oxidation of ethidium bromide with bleach is not an acceptable destruction technique and must not be used.

Alternatives To Ethidium Bromide

There are less hazardous and environmentally friendly alternatives to ethidium bromide. For more information visit the websites of the products listed below.

<u>Company</u>	<u>Product</u>	<u>Website</u>
Invitrogen	SYBR Safe	http://probes.invitrogen.com/products/sybrsafe/
Biotium	GelRed / GelGreen	http://www.biotium.com/
AMRESCO	EZ Vision DNA Dye	http://www.amresco-inc.com/