

## ETHIDIUM BROMIDE WASTE MANAGEMENT FACT SHEET 010612A

Ethidium bromide (ETBR) is commonly used in molecular biology laboratories as a nucleic acid stain. ETBR possesses properties that are noteworthy when considering safe management policies. A summary of these properties is provided below:

### POTENTIAL HEALTH EFFECTS<sup>1</sup>

- **Eyes:** Causes redness and pain. Causes eye irritation.
- **Skin:** Causes skin irritation. Harmful if absorbed through the skin.
- **Ingestion:** Harmful if swallowed. May cause irritation of the digestive tract.
- **Inhalation:** May be fatal if inhaled. May cause respiratory tract irritation.
- **Chronic:** No information available

### TOXICOLOGICAL INFORMATION<sup>1</sup>

- CAS # 1239-45-8
- LD50/LC50:  
Oral, mouse: LD50 = 100mg/kg  
Oral, rat: LD50 = 1.503 – 2.177 mg/kg  
LC50 = 1 h – 11,8 – 134,0 mg/m<sup>3</sup>
- Mutagenicity: Ames-test: positive.

Even though these properties demand the attention of anyone working with this product, these same properties do not meet the criteria for “hazardous waste” as defined in state and federal regulations. These regulations at the federal level are based on the Resource Conservation and Recovery Act (RCRA) and are, therefore, typically referred to as RCRA regulations. It can rightly be said, then, that waste ETBR (whether in solution or gels) is “Non-RCRA Regulated”.

While it is not regulated as RCRA hazardous waste, ETBR is a mutagen and as was stated above handling and disposal should be done with considerable caution in accordance with appropriate safety procedures. Based on these considerations, the following disposal procedures for ETBR-containing wastes are recommended:

### ELECTROPHORESIS GELS

ETBR gels should be placed in blue 5-gallon containers as shown below and labeled as “Non-RCRA Regulated Waste.”<sup>2</sup> Further, it is recommended that a label be placed on the container readily identifying it as containing ETBR. Contaminated debris (i.e. gloves, pipette tips, etc.) should be disposed of in the blue containers.



### ETBR SOLUTIONS

ETBR solutions should be collected in 5-gallon containers as shown below and labeled as “Non-RCRA Regulated Waste.” Further, it is recommended that a label be placed on the container readily identifying it as containing ETBR.



To request a pick-up of waste ETBR the [E-Trax<sup>3</sup>](#) waste management tracking system should be utilized. It is not appropriate to dispose of ETBR gels with regular trash and it is not permissible for ETBR solutions to be drain-disposed.

Contact Ron Taylor, Environmental Affairs Compliance Manager, at 257-3219 ([ron.taylor@uky.edu](mailto:ron.taylor@uky.edu)) for further information.

1 - Ethidium bromide MSDS, [http://www.chemblink.com/MSDS/MSDSFiles/1239-45-8\\_Dudley.pdf](http://www.chemblink.com/MSDS/MSDSFiles/1239-45-8_Dudley.pdf)  
 2 - Containers and labels are available free of charge from the Environmental Management Department (323-6280).  
 3 - [http://ehs.uky.edu/env/waste\\_pick-up.php](http://ehs.uky.edu/env/waste_pick-up.php) or contact Brian Butler at 323-5005 for more information.