
Ethidium Bromide

Standard Operating Procedure

Revision Date 3/24/2022



Potential Safety Hazards

Toxicity – Ethidium Bromide is a potential human mutagen (causes living cell mutations). An acute exposure may cause irritation to the mouth, upper respiratory track, skin and eyes. Primary routes of exposure include inhalation, skin/eye absorption, and ingestion.

Safe Work Practices

Risk Minimization

- Avoid working with Ethidium Bromide in the raw form (powder or crystals). Order pre-diluted stock solutions where possible. This will minimize the risk of a spill when mixing solutions.

Engineering Controls

- Conduct all operations involving Ethidium Bromide powder or mists in a fume hood.
- Utilize a fume hood when handling stock solutions of Ethidium Bromide if possible.

Personal Protective Equipment (PPE)

- Wear appropriate PPE when working with Ethidium Bromide powder, crystals, and solutions. Appropriate PPE includes the following.
 - eye protection,
 - nitrile gloves (double glove for additional protection),
 - long pants,
 - closed toed shoes, and
 - lab coat.
- Be aware that latex gloves do not offer adequate protection from Ethidium Bromide.

Chemical Hygiene

- Change PPE promptly, especially gloves, if Ethidium Bromide contamination occurs.
- Avoid cross contamination by changing gloves frequently, even if not visibly contaminated.
- Wash hands after working with Ethidium Bromide even if gloves were worn.
- Prohibit all food and beverages in all chemical laboratories to minimize the risk of ingestion.

Preparedness for an Ethidium Bromide Spill

Spill Awareness

- Recognition of an Ethidium Bromide spill typically involves observation of the liquid, powder, or crystal form of the material that is not contained.

Spill Response

- Absorb spills of Ethidium Bromide solutions and treat the absorbent as a regulated waste.
- Collect dry Ethidium Bromide spills in a manner that does not generate dust and treat the collected material as a regulated waste.
- Decontaminate any surfaces affected by the spill with soap and water.

Unneeded Material

- Manage Ethidium Bromide powders, solutions, and contaminated items as a regulated waste material and dispose via the Environmental Health & Safety Department (<https://www.isu.edu/ehs/>).