

STANDARD OPERATING PROCEDURE

**FOR ETHIDIUM BROMIDE IN LABORATORY Room 419/429**

Plant Ag SOP #	2002-4
Revision date:	26 Aug 2002
Reviewed by Env Health & Safety:	15 Aug 2002

---

I. ASSOCIATED RISKS

Ethidium bromide (EtBr) is a widely used dye for visualization of nucleic acids in electrophoretic gels. It inserts directly into DNA to produce a fluorescent complex visible with UV light.

EtBr is a known mutagen in certain animal and microorganism test systems, and although its toxicity has not been evaluated in humans it should be handled with considerable caution. It will cause eye and skin irritation, and is irritating to mucous membranes and upper respiratory tract. Because of its chemical nature, ethidium bromide is a substance that should be considered particularly hazardous.

II. RISK MANAGEMENT

- C Its use will be restricted to laboratory 429. The work area will be clearly designated. Use of EtBr in laboratory 419 is not permitted.
- C Use with adequate ventilation.
- C Appropriate personal protective clothing is required.
- C All EtBr contaminated material will be processed as hazardous waste.

III. OPERATOR INSTRUCTIONS

3.1 Training

- C All users will be WHMIS trained
- C The MSD sheets for EtBr must be reviewed.
- C The SOP for EtBr must be reviewed.

3.2 Use

- C Use of ethidium bromide will be restricted to lab 429. The work area will be clearly designated.
- C Personal protective clothing must be worn when handling EtBr. Nitrile (blue) gloves, labcoat, eye protection, and closed-toed shoes are required.
- C Gloves must be removed prior to exiting room 429. The ONLY reason used gloves will be permitted outside of 429 is for the transport of a gel to one of the documentation systems. One gloved hand will be used to carry the gel (contained in a tray) and the other hand will be ungloved and used to open doors, operate the documentation equipment, etc.
- C All EtBr contaminated material will be processed as hazardous waste. Staining solutions will be processed as liquid hazardous waste. Materials such as pipette tips, gels, and toweling will be processed as bagged solid hazardous waste.
- C All containers containing EtBr solutions will be labeled as to contents and concentration.
- C Chemical spill pillows will be available in room 429 for large volume liquid spills. The spill area will be decontaminated with 6 water washes (until we find something better to suggest). All spill pillows and towels used to clean up the spill will be double bagged as solid waste and left in the fumehood. The lab supervisor will be notified of any spills large enough to have required the use of a spill pillow for containment.
- C All desktop areas will be covered with bench-kote paper. All spills will be cleaned up immediately and the contaminated bench-kote will be bagged as solid waste.
- C The dry powder form of ethidium bromide will not be used. Small preweighed tablets will be used to make stain solutions.

STANDARD OPERATING PROCEDURE

**FOR ETHIDIUM BROMIDE IN LABORATORY Room 419/429**

---

Plant Ag SOP #	2002-4
Revision date:	26 Aug 2002
Reviewed by Env Health & Safety:	15 Aug 2002

IV. EMERGENCY AND FIRST AID PROCEDURES

In the event of chemical exposure emergency, dial Ext. 2000 to reach emergency services.

Provide the following interim first aid measures until help arrives:

*Ingestion:* If conscious, rinse the mouth with water. Do not induce vomiting. Keep warm and at rest.

*Inhalation:* Get fresh air immediately. If breathing has stopped, have a qualified person administer artificial respiration with a mouth-shield

*Skin contact:* Remove contaminated clothing and shoes. Wash with mild soap and large amounts of water for 10-20 minutes. Get medical attention if you experience appreciable eye or skin irritation.

*Eye contact:* Wash immediately, holding open the eye lids, for 15-20 minutes. Remove contact lenses. Get medical attention.