

GUIDELINES ON HANDLING, PREPARING, AND USING MS-222

PURPOSE:

The anesthetic agent, MS-222, or Tricaine methanesulfonate, is used primarily for the sedation, anesthesia, and euthanasia of fish, amphibians, and other aquatic, ectothermic animals. These guidelines seek to inform users of its proper handling and use.

GUIDELINES:

The sole responsibility of ensuring the safe use of MS-222 lies with the Principal Investigator. All personnel using MS-222 must be properly trained in its handling, use, and preparation.

STORAGE

MS-222 powder (Finquel or Tricaine-S) must be stored at room temperature in a dark cabinet.

SAFETY PRECAUTIONS

Gloves, eye protection, facemasks, and lab coats must be worn in order to avoid skin contact when preparing MS-222 solutions from a powder. If MS-222 is being used in the field, utilize proper precautions including but not limited to gloves and eye protection.

PREPARATION

MS-222 solutions must be prepared in a well ventilated area, under a functional fume hood, or while wearing a fit-tested respirator. MS-222 must be prepared in water similar to the culture conditions of the animal in question. Remember that MS-222 is water soluble and that the culture water must have adequate oxygen, pH, temperature, alkalinity, hardness, and salinity for the animal species being used. MS-222 is a basic compound and must be buffered using sodium bicarbonate. The resulting solution must be between pH 7 and 7.5.

LABELING AND STORAGE OF PREPARED SOLUTIONS

Once prepared, stock containers must be appropriately labeled with the contents and expiration date (within one month of preparation date). If at any time a brown color is observed, properly discard and replace the solution. Solutions must be stored in an opaque container to be adequately protected from light and be subsequently refrigerated or frozen.

FEDERAL & ENVIRONMENTAL CONCERNS

Per the FDA: Do not use within 21 days of harvesting fish for food. Use in fish intended for food shall be restricted to Ictaluridae, Salmonidae, Esocidae, and Percidae. Water temperature should exceed 50 degrees Fahrenheit (10 degrees Celsius). Use of the drug with all other species of fish and cold-blooded animals must be limited to hatchery or laboratory settings.

- If MS-222 is used in the field, all fish must be held for 21 days prior to release.

DISPOSING OF MS-222

Disposal must be consistent with established laws and regulations. Solid waste must be sent off for proper disposal. Solution waste may be diluted at a ratio of 4 parts water to 1 part solution and drain disposed.

- If in the field, the solution must be diluted 4:1 and disposed of on the ground but not near waterways.