

Auburn University Risk Management and Safety <b>Standard Operating Procedure</b>	Effective Date: 2/21/2015		SOP Number: AP – 101
	Supersedes NA	Superseded: NA	Page: 1 of 2
Subject: <b>Tricaine Methane Sulfonate (MS-222) Preparation, Use, &amp; Disposal</b>	Approval: <u>Donna Tucker</u> Risk Management and Safety		

#### I. PURPOSE

This document provides standard procedures for preparation, use and disposal of Tricaine Methane Sulfonate (MS-222).

#### II. OBJECTIVE

The purpose of this procedure is to prevent and minimize the hazards to personnel during the preparation and use of this chemical and to minimize any harmful effects to the environment upon disposal of this chemical.

#### III. SCOPE

The guideline shall apply to all AU faculty, staff and students.

#### IV. GENERAL GUIDELINES

Tricaine Methane Sulfonate (MS-222) is an anesthetic agent used for the sedation, anesthesia, and euthanasia of fish, amphibians, and other aquatic ectothermic animals. The skin of amphibians and fish is highly permeable to many chemicals including MS-222, thus, soaking the animal in a solution of MS-222 is an effective method of anesthesia. Making the solution involves mixing the powder into clean, chemical-free water and adjusting the pH.

The following guidelines should be adhered to when preparing MS-222 solution:

- Don appropriate personal protective equipment before preparing MS-222. Wear gloves and eye protection. Mix the solution with a utensil. In the laboratory prepare MS-222 in a properly exhausted fume hood or wearing a fit tested respirator. In the field prepare solution in an outdoor open area.
- Follow package directions for mixing the solution in the proper concentration for the species and level of anesthesia required. For best results use freshly prepared solutions.
- MS-222 is acidic and must be buffered with sodium bicarbonate as per package directions until a pH of 7-7.5 is reached.
- Wear gloves to handle animals exposed to MS-222.
- Anesthesia with MS-222 is not instantaneous; therefore the animal will continue to fall into deeper levels of anesthesia after it is removed from the anesthetic solution. Thoroughly rinse the animal in fresh water to prevent the animal from falling into deeper levels of anesthesia by removing unabsorbed chemical from the skin surface.
- Anesthetic solutions should only be reused on normal-appearing animals that are present at the same body of water. Discard used MS-222 whenever:
  - Moving from one body of water to another
  - A sick or abnormally behaving animal has been anesthetized
  - The solution becomes fouled
  - The solution becomes cloudy or discolored
- In laboratory dispose of MS-222 wastes by pouring into a sanitary sewer drain.
- In the field dilute the solution with water and dump the waste on land away from water or sites where the solutions would drain into water. If possible the solution should be discarded into the sanitary sewer.

- Do not discard MS-222 solution directly into surface water, storm water conveyances, catch basins, or into water supplies.
- Follow package directions for storage of unused solution.
- If treated animal is destined for use as food follow package directions for holding times/days before use.
- Animals that have been  euthanized  with MS-222  cannot  be used as food for human consumption.

## **References:**

*United States Geological Society. Anesthesia of Amphibians in the Field, Standard Operating Procedure, Amphibian Research & Monitoring Initiative SOP No. 104*

Western Chemical, Inc. *Tricaine-S [Product Insert]. Ferndale, Washington.*

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