



**Florida State University  
Animal Care and Use Committee (ACUC)**

**Guidelines on Preparation and Storage of Tricaine Methanesulfonate (MS 222)**

**1.0 Scope and Application**

Tricaine methanesulfonate (MS-222) is an anesthetic agent used for the sedation, anesthesia, and euthanasia of fish, amphibians, and other aquatic animals. MS-222 is an irritant to the eyes, respiratory system and skin. The following guidelines are intended to prevent and minimize the hazards to personnel during the preparation and use of MS-222. It is the responsibility of the Principal Investigator to provide these guidelines to research personnel working with MS-222 in their laboratory.

**2.0 Summary of Method**

- Personnel must wear gloves, protective clothing (lab coat or apron), and eye protection when preparing MS-222 stock solutions in the laboratory. Weighing of compound should be performed in a fume hood, biosafety station, ventilated work station or using a top loading balance with a clear plastic wind guard.
- Reconstitution of MS-222 powder in liquid must be done in a properly exhausted chemical fume hood, biosafety cabinet, ventilated work station, or while wearing a N-95 respirator/dust mask. If respiratory protection, such as a N-95 respirator is required, personnel must complete respirator medical evaluation, undergo respirator selection, fit testing, and receive EHS training prior to use.
- For field work, use of pre-weighed powder or stock amounts in containers prepared in the lab, is preferred. Staff preparing this agent in the field must work in an area downwind and away from others, wear gloves, protective clothing, and eye protection. A fit-tested N-95 respirator/dust mask will also be necessary. Personnel must complete respirator medical evaluation, undergo respirator selection, fit testing, and receive EHS training prior to respirator use.
- MS-222 is acidic when in solution and must be buffered resulting in a solution of pH 7.0 - 7.5 before being used in work with animals.
- Stock solutions should be stored in dark, opaque containers. The solution must be replaced any time a brown color is observed in the liquid. Once mixed, stock solution containers must be properly labeled and dated to expire no longer than one month after preparation. Stock solutions may be refrigerated or frozen.

- Stock solutions should be disposed of by diluting with a large amount of water prior to and while pouring down a sanitary drain. Working solutions in the lab, should be poured down a sanitary drain with water running. Solutions used in the field should be returned to the laboratory for disposal whenever possible. If laboratory disposal is not possible, extensively dilute the working solution prior to disposal. Do not discard MS-222 solution directly into surface water, storm water conveyances, catch basins or into other natural water sources.

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Approval Date: July 31, 2019