

Standard Operating Procedure:

Laboratory Information

Department:	
Principal Investigator(s):	
Laboratory Manager/Supervisor (or designated laboratory-specific chemical hygiene officer):	
Laboratory emergency contact (name and phone):	
Laboratory phone:	
Designated area (s) of these procedures with chemicals(s): (building and room):	
Agent storage location (building and room) and specifics regarding location/container/cabinets:	

Chemical Information

Chemical Name(s), including CAS No: 	Tricaine methane sulfonate (Synonym: MS-222) CAS 886-86-2
GHS Classification and Hazard Statements (see SDS sheet provided by the chemical's manufacturer): Example: <i>Ethanol: H225: Highly Flammable liquid and vapor [Danger Flammable liquids]; H319: Causes serious eye irritation [Warning Serious eye damage/eye irritation]</i> H315: Causes skin irritation [Warning Skin corrosion/irritation] H319: Causes serious eye irritation [Warning Serious eye damage/eye irritation] H335: May cause respiratory irritation [Warning Specific target organ toxicity, single exposure; Respiratory tract irritation] H402 Short-term (acute) aquatic hazard. Harmful to aquatic life.	

Signs and symptoms of exposure or release	Skin redness or rash, eye irritation, respiratory irritation.
Routes of exposure	Potential exposure routes include inhalation, ingestion, and direct contact with skin and mucous membranes.
Required engineering controls: (i.e., chemical fume hood, biological safety cabinet, glove box, temperature control, humidity control, shielding, luer-lock syringe, in-line HEPA filter, etc.)	Certified chemical fume hood Eye wash
Personal Protective Equipment (PPE) required for procedures:	Lab coat Disposable gloves Eye protection For large volumes or activities with a potential for splashing, safety goggles shall be worn.
Known incompatibilities with chemical(s):	Strong oxidizing agents
Special storage and handling considerations:	P261 Avoid breathing dust. P264 Wash skin thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P273 Avoid release to the environment. P280 Wear protective gloves/ eye protection/ face protection. P302+P352 IF ON SKIN: Wash with plenty of soap and water. P304+P340+P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. CALL a POISON CENTER/ doctor if you feel unwell. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P332+P313 If skin irritation occurs: Get medical advice/ attention. P337+P313 If eye irritation persists: Get medical advice/ attention. P362 Take off contaminated clothing and wash before reuse. P403+P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up
Please list the approximate amount(s) of chemical(s) utilized in all procedures	

Please describe, in a stepwise fashion, the work practices and procedures involved in the handling and utilization of this agent. Please be clear and complete in the description of procedures (i.e., measuring, weighing, pouring, mixing, injection, mixing, transporting, administration to animals, heating, etc.). Be sure to include any precautionary safety steps undertaken during these procedures. Please submit additional pages, if necessary.	Tricaine Methane Sulfonate (MS-222) is an anesthetic agent used for the sedation, anesthesia, and euthanasia of fish, amphibians, and other aquatic ectothermic animals. 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 lab coat, gloves and eye protection. Mix the solution with a utensil. In the laboratory prepare MS-222 in a properly exhausted chemical fume hood. In the field prepare solution in an outdoor open area. • Mix 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. Discard used MS-222 whenever: The solution becomes fouled or becomes cloudy or discolored.
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Waste collection and disposal procedures:	UK EQMD policy states that all water containing Tricaine/MS-222 be collected separately in waste containers and picked up as hazardous waste via the ETrax waste management system. If a sanitary sewer is not available, the waste must be brought back to the laboratory for disposal through EQM. For field operations, do not to discard the solution directly into surface water, storm water conveyances, catch basins, or other natural water sources.
Spill procedure: Lab Specific Notes on Spill Response:	Major spills of stock solution: Leave the area and notify others not to enter. Report the spill to the UK Environmental Quality Management Department (EQMD) at (859) 323-6280 (M-F 8am-5pm) or after hours by dialing 911 from any on-campus phone or by contacting the UK Police at (859) 257-UKPD (8573). Minor spills of manageable amount: If necessary, contact EQMD for guidance. Consult manufacturer's SDS for instructions and compatibilities for your chemical (Be aware of any materials such as paper towels or water that could be incompatible with your spilled chemical!)
Response procedures in the case of an incident or injury:	UK Employees: • After receiving first aid (refer to the chemical's SDS), report the occupational exposure to a hazardous chemical to UK Worker's Care at 1-800-440-6285. • If needed, an appointment will be made for the employee at UK UHS. • For severe emergency or injury, call 911 or proceed to the UK Chandler Hospital Emergency Department UK Students: • Call UHS at (859) 323-APPT to report an occupational exposure to a chemical hazard. • If needed, an appointment will be made for the employee at UK UHS. For severe emergency or injury, call 911 or proceed to the UK Chandler Hospital Emergency Department Additional Lab-Specific Emergency Procedures: P302+P352 IF ON SKIN: Wash with plenty of soap and water. P304+P340+P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. CALL a POISON CENTER/ doctor if you feel unwell. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P332+P313 If skin irritation occurs: Get medical advice/ attention. P337+P313 If eye irritation persists: Get medical advice/ attention. P362 Take off contaminated clothing and wash before reuse.

A copy of the manufacturer's SDS for this agent and the PI approved SOP shall be kept in the lab's Chemical Hygiene Plan (CHP). The CHP shall be stored in a location known to all laboratory personnel and is accessible during work hours.

Personnel Training

- Prior to conducting any work with (name of the chemical), designated personnel must be provided training specific to the hazard involved in working with the substance.
- The PI must provide his/her lab personnel with a copy of the SOP and a copy of the SDS provided by the manufacturer. Any further training materials must be documented and stored in the lab's Laboratory Safety Manual and available to internal UK or external oversight agency inspectors.
- The PI must ensure that his/her lab personnel have completed the initial and the consecutive annually required Chemical Hygiene trainings and Hazardous Waste training.

The undersigned have read and understood the content of this SOP and the SDS for: Tricaine/MS-222

[illegible]

SOP Reviewed and Approved by:

PI: (typed name)	
PI: (signature and date)	
Lab Manager/Supervisor (typed name)	
Lab Manager/Supervisor (signature and date)	