



Lab Safety Guideline: Tricaine Methanesulfonate (MS-222) [CAS No. 886-86-2]

MS-222, also known as tricaine and TMS, is an anesthetic and euthanasia agent for fish, amphibians, and other aquatic cold-blooded animals. MS-222 is supplied as a crystalline powder which is readily soluble in all types of water.

Before using MS-222, review this lab safety guideline and familiarize yourself with the hazards and the proper dosing concentration for your intended application (such as anesthesia, transport, surgery, or euthanasia).

Hazards



- Eye, skin, and respiratory irritant.
- Unbuffered MS-222 in solution is acidic.
- Harmful to aquatic life.

Precautions

Before Starting Work

- Ensure you have a written experimental protocol that includes safety information.
- Review the manufacture's [safety data sheet \(SDS\) and additional chemical information](#).
- Receive hands-on training for safe handling, use, storage, and disposal of MS-222.
- Familiarize yourself with the general emergency procedures outlined in the [Lab Emergency Response Guide](#).
- Order only the quantity of MS-222 that you need for your protocol.



- Identify the location of the nearest eyewash and shower and verify that they are accessible.

During Work

Avoid contact with MS-222:

- Wash your hands thoroughly with soap and water each time you remove your gloves.
- Keep containers tightly closed when you aren't using them.
- Use a fume hood when bringing MS-222 powder into solution.

Wear appropriate personal protective equipment (PPE):

Materials Being Handled	Minimum Required PPE
Dry chemicals	Safety glasses, nitrile gloves, lab coat, and a combination of shoes and clothes that fully cover your legs and feet.
Liquid solutions	Safety glasses and nitrile gloves.

After Completing Work

1. Thoroughly clean your work area and remove any MS-222 residue with soap and water or Simple Green.
2. Return solutions and stock containers to the storage area following the [Lab Chemical Storage Guide](#) and ensure the container is tightly closed.



Storage Group	Storage Requirements
General Storage (GS)	<ul style="list-style-type: none">• Store in original containers or other appropriate containers.• Store primary container in designated and compatible secondary containers.• Store away from incompatibles like oxidizing agents and acids.

3. Wash your hands and forearms thoroughly with soap and water before leaving the lab.

Emergency Procedures

First Aid

Always treat affected areas immediately and remove contaminated clothing, shoes, and jewelry.

Exposure	Emergency Procedure
Skin contact	<ol style="list-style-type: none">1. Flush skin with water for 15 minutes.2. Thoroughly wash skin with soap and water.3. Seek medical attention.
Eye contact	<ol style="list-style-type: none">1. Using an eyewash, flush eyes while holding eyelids open for at least 15 minutes.2. Seek medical attention.
Inhalation	<ol style="list-style-type: none">1. Move person to a location with fresh air.2. Seek medical attention.
Ingestion	Don't induce vomiting. <ol style="list-style-type: none">1. If conscious, rinse mouth with water.2. Seek medical attention.



Spill Response

1. Wear appropriate PPE as outlined in [During Work](#) and use appropriate spill supplies (paper towels or absorbent pads).
2. Clean spilled material.
3. Collect debris in an appropriate container and move it to your Satellite Accumulation Area.
4. Label the container with an appropriately completed hazardous waste tag and request a waste pickup.

For support or technical assistance, call the Operations Center at 617-495-5560 (HMS and HSDM should call 617-432-1901).