

[From SOP for the Policy on the Use of Non-pharmaceutical-Grade Compounds in Research Animals](#)

iii. UW-Madison ACUC-Approved Recipe for MS-222

MS-222 can be used for axolotls, aquatic salamanders, fish and frogs. FINQUEL or Tricaine-S are the best forms of this material on the market and is considered to be pharmaceutical-grade. In the event non-pharmaceutical-grade MS-222 is scientifically justified in an approved protocol, the following formulation is approved by UW-Madison.

INGREDIENTS

- MS-222 powder
- Sodium Bicarbonate
- pH paper

MIXING

1. Dissolve MS-222 in water
 - a. Fish (variable by species): 25-300 mg/L (25-100 mg/L = good start point for Zebrafish)
 - b. Frogs, salamanders (variable by species): 200-1000 mg/L for anesthesia, 2000 mg/L for euthanasia
2. Adjust the pH to about 7.4 using powdered Sodium Bicarbonate
 - a. Most critical at concentrations above 500 mg/L

NOTES

- For surgical purposes, fresh solution should be made for every surgery to minimize contamination and infection.

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- For euthanasia, MS-222 should be made fresh weekly.
- Discard old MS-222 down the sink diluted with lots of fresh cold water.
- Avoid exposure to skin; wear gloves while mixing; **CAN BE NEUROTOXIC IN HUMANS**