



MS222[®]

- A white powder for dissolution in water and subsequent topical application
- Active Ingredient:
Tricaine methane sulphonate
100% w/w
- Used in an immersion bath for sedation, immobilisation and anaesthesia of fish both ornamental and those intended for human consumption.
- Indications for use include transportation, weighing, tagging, clipping, stripping of breed stock, blood sampling and surgical procedures.

Legal Category

POM-VPS

Marketing Authorisation Number

Vm 11003/4013

Licence Holder

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Withdrawal Period

Fish must not be slaughtered for human consumption during treatment. Fish may be slaughtered for human consumption only after 70 degree days from the last treatment.

Contra-indications

- Do not exceed the dose recommended for each category of fish.
- Do not use the product in the following tropical fish:-
Apistogramma ramirezi, Balantiocheilus melanopterus, Etroplus surrantsensis, Melanotaemia macculochi, Monodactylus argenteus, Phenacogrammus interruptus and Scatophagus argus.

Operator Warnings

Wear latex/rubber gloves when handling the product or solution. If accidental skin or eye contact occurs, wash the affected area immediately with clean water.
Do not eat, drink or smoke while handling the product.

Environmental Warnings

Dispose of the product and its solutions by burying in waste ground away from water courses.

Pharmaceutical Warnings

- Store below 25 degrees celcius.
- Protect from light
- Store in a dry place. Re-seal opened packs immediately after use to exclude moisture.
- Solutions should be used only on the day of preparation and should be protected from direct sunlight until used.

General Precautions

- Keep out of the reach of children.
- For animal treatment only.
- Brood stock anaesthetised for stripping should be immersed in unmedicated water immediately before collection of eggs and milt to avoid direct contact of either with the product.
- Prepare a solution in water of the type and composition normally needed for the fish species to be treated.
- Overdose or prolonged exposure to the product may cause respiratory failure and death. Fish should be returned to unmedicated water under conditions optimal to their survival as soon as possible.
- Any adverse reactions to MS 222 in use should be reported to PHARMAQ Ltd. by the user with details of all the conditions prevailing.



Dosage and administration

A number of factors influence the efficacy and safety of the product, including concentration of drug in water, duration of exposure, temperature, oxygen content, salinity and hardness of water, size of fish (smaller are more susceptible) and density of biomass.

Because of these variable factors, it is strongly recommended that a test of the selected drug concentration and exposure time is conducted with a small group of representative fish before larger numbers are medicated. The product should be dissolved in water of the same composition and characteristics as that to which the fish are accustomed. As the product has good aqueous solubility, it may be added directly to the container. Effects on the fish should be monitored as the product is gradually introduced.

Before anaesthesia, or prolonged sedation, should be fasted for 12 to 24 hours. During treatment, they should be stocked at a density not exceeding 80g/litre. To minimise damage and loss when medicated for long periods for transport etc. the level of sedation should allow fish to maintain their equilibrium and swimming position. Aeration should be provided unless sedation or anaesthesia of short duration.

In anaesthesia, loss of reflexes takes place in one to fifteen minutes after immersion, depending upon concentration employed. Narcotised fish should be removed from medicated water and returned to their normal environment as soon as possible, when recovery will take between one and thirty minutes.

The following examples of dose rates and exposure times are based on laboratory and field experience:

	MS222 Concentration mg/litre of water	Immersion Time (Mins)
Trout species (7-17 °C)		
Sedation:	10-30	Up to 480
Anaesthesia: light	30-80	Up to 30
Anaesthesia: deeper	80-180	Up to 10
Salmon Species		
Sedation	7-30	Up to 240
Anaesthesia: light	30-80	Up to 10
Anaesthesia: deeper	80-100	Up to 5
Bass Species		
Sedation:	8-30	Up to 480
Anaesthesia: light	30-70	Up to 20
Anaesthesia: deeper	70-100	Up to 4
Carp Species		
Sedation:	20-30	Up to 1440
Anaesthesia:	30-200	Up to 8
Freshwater Tropical Fish		
Sedation:	30-50	Up to 1440

The information given on this form is for guidance only. PHARMAQ Ltd. accept no responsibility for any adverse reactions arising from the incorrect use of this material.

