Methylene Blue

2.303% water solution

TRADITIONAL CHEMICALLY BASED FUNGUS CONTROL

- Treats fungal infections on fertile fish eggs
- Treats superficial fungal infections of fish
- For fresh and saltwater

SAFE TO USE WITH FRY

Methylene Blue is effective against superficial fungal infections of fish. The drug may be used as an alternative to Malachite Green for the control of fungus when it is known that the fish to be treated are sensitive. Methylene Blue is safe for use with fish eggs and fry for the prevention of fungal infections. As a secondary use, it is effective against some external protozoans, such as Ichthyophthirius (Ich), Chilodonella and Costia.

The properties of the drug as an oxygen transporter (it converts methemoglobin to the normal oxygen carrying component of fish blood, hemoglobin) allow it to be used in the treatment of known cyanide and nitrite poisoning of aquarium fishes. It has been suggested that newly arrived marine fish placed in Methylene Blue can have their survival rate increased as Methylene Blue aids in the reversal of nitrite and/or cyanide poisoning.

The therapeutic action of Methylene Blue on bacteria and other parasites is probably due to its binding with cytoplasmic structures within the cell and also its interference with oxidation reduction processes.

Specifications & Stability

SPECIFICATIONS
Contains zinc free, chloride salt of Methylene Blue. Provided as a 2.303% water solution.

STABILITY
Methylene Blue is stable indefinitely in the 2.303% solution. Aqueous solutions show very little, if any, decomposition even when exposed to sunlight.

Directions for Use

SUGGESTED TREATMENT PROCEDURES

The following procedures are suggested for freshwater and marine aquariums and ponds. Methylene Blue is removed by activated carbon filtration. It will also be absorbed by porous materials such as rock, coral and wood. The product is best used in bare aquariums or ponds, especially if they are new. Methylene Blue may permanently color the silicone sealant in aquariums. At the conclusion of all treatments, a partial or complete water change should be made and activated carbon replaced in the filter.

Prevention or treatment of fungus on fish eggs:

(a) Remove carbon from the filter and continue to operate with mechanical filter media.
(b) Add 1 teaspoon (98 drops / 5 ml) of 2.303% Methylene Blue per 40 liters of water. This produces a concentration of 3 ppm. For increased concentrations, add approximately 1/3 teaspoon (30 drops / 1.64 ml) per 40 liters for each required 1 ppm increase.
(c) Only one application is needed. Treatment should continue for 3 days past free swimming stage or for livebearers 2 days after birth.

Prevention or treatment of fungus or external parasitic protozoans:

(a) Remove carbon filter and continue to operate with mechanical filter media throughout the treatment period.
(b) Add 1 teaspoon of 2.303% Methylene Blue per 40 liters of water. This produces a concentration of 3 ppm. Continue the treatment for 3 to 5 days.
(c) Make a water change as noted and replace the filter carbon at the conclusion of the treatment.

As an aid in reversal of nitrite (NO_2^-) poisoning of aquarium fishes:

(a) Remove carbon filter and continue to operate with mechanical filter media throughout the treatment period.
(b) Add 1 teaspoon of 2.303% Methylene Blue per 40 liters of water. This produces a concentration of 3 ppm. Continue the treatment for 3 to 5 days.
(c) Make a water change as noted and replace the filter carbon at the conclusion of the treatment.

For use as a dip for treatment of fungus or external parasitic protozoans:

(a) Prepare a nonmetallic container of sufficient size to contain the fish to be treated by adding water similar to the original aquarium.
(b) Add 5 teaspoons (25 ml) per 12 liters of water. This produces a concentration of 50 ppm. It is not recommended that the concentration be increased beyond 50 ppm.
(c) Place fishes to be treated in this solution for no longer than 10 seconds.
(d) Return fish to original aquarium.

Diagnosis

GENERAL DIAGNOSIS OF PARASITIC DISEASES OF FISHES

The following brief summary of clinical signs often associated with the parasitic protozoans discussed above is intended only as an aid for the beginning aquarist. It is not to be thought of as a definitive diagnostic key. It is also important that the aquarist consult appropriate, accurate references for more specific information regarding disease problems of fishes. In addition, if possible, skin and/or gill smears should be made and examined by a qualified fish diagnostician. Microscopic examination is recommended and is always essential for confirmation of a particular disease. In the clinical signs indicated below, a particular description may be followed by a specific disease causing organism in brackets. This indicates that there is a high probability that the cause of the disease you may observe on the fish is the organism indicated in the brackets. It should be qualified that different clinical signs can be seen during the disease process and that these can occur as the result of more than one disease causing organism.

Clinical Signs

Increased respiration; loss of normal body color; presence of discrete white spots (freshwater or marine Ich); scratching on tank bottom or on objects; lethargic behavior; white tufts or strands on body [Fungus]; dustlike "peppered" spots on body surface, having a yellowish cast [Oodinium].

Contraindications & Toxicity

CONTRAINDICATIONS

Methylene Blue is not indicated for the treatment of Oodinium, bacterial infections, flukes (monogenetic trematodes) or for moderately-severe to severe fungal infections. It is not indicated for use as a net disinfectant or sterilizer.

The use of Methylene Blue is primarily for the control of fungus on eggs, and to assist the transport of oxygen in fish poisoned by cyanide and nitrite ion. Secondary uses are for the control of some external protozoan parasites of fishes. Methylene Blue is an alternative for treatment with other medications when prevailing factors preclude the use of another medication.

CAUTIONS

This product should not be used in recirculation systems that utilize biological filtration. Methylene Blue will interfere with the normal biological processes of nitrifying filter bacteria. Methylene Blue can also interfere with normal plant growth.

TOXICITY

Methylene Blue has a wide safety margin and is nontoxic when used as recommended. Fishes tolerate relatively high dosages without side effects.