



TryMarine Safety Overview

TryMarine Safety Profile Is Compelling

TryMarine’s proprietary formulation has been applied in water bodies globally for more than a decade. They have been studied and approved by international regulatory authorities and are continuously tested internally and by 3rd party labs in the US.

1) NSF/ANSI/CAN Standard 60 Certified



NSF/ANSI/CAN 60 certification is the nationally recognized standard for evaluating drinking water treatment products for potential health effects. As part of certification, products must meet stringent toxicology-based criteria - the Maximum Use Levels are set at 10% or less of the U.S. EPA’s Maximum Contaminant Levels for regulated contaminants. TryMarine not only meets all NSF/ANSI/CAN 60 requirements, but with typical application rates of 0.5–2 ppm, is used at levels that are hundreds of times below the already conservative certified Maximum Use Level of 522 ppm.

2) In-Vivo Fish Health Testing: A Zebra fish health test protocol*, analyzed by The Zebrafish International Resource Center (ZIRC) at The University of Oregon, produced dramatic fish health improvements from lake water treated with TryMarine (TM) versus control, untreated water.

Summary of Zebrafish Histopathology					
Fish Specimen:	Chronic Inflammation	Protist Infection	Bacteriosis	Damaged Organ	ZIRC Conclusions:
Control 1	Y	Y	Y	Kidney, Ovary, Liver, Intestine	Mycobacteriosis, intestinal nematodes, protist
Control 2	Y (Severe)	Y	Y	Bladder, Gut, Coelom	Mycobacteriosis, protist
Control 3	Y (Severe)	Y	Y	Intestine, Bladder	Severe aero cystitis, protist
Control 4	Y (Severe)	N	Y	Liver, Spleen, Coelom, CNS	Severe coelomitis, hepatitis, microsporidiosis
TM Treated 1	N	N	N	None	No pathology present
TM Treated 2	N	N	Y	None	Ultimobranchial adenoma
TM Treated 3	Y	N	N	Coelom, CNS	Mycobacteriosis
TM Treated 4	N	N	N	Spinal Cord	Microsporidiosis

* The protocol was designed and performed by Dr. Gobler as part of due diligence before using TryMarine in local waters. Zebrafish were acquired from a lab sourcing retailer and randomly assigned to Control or Treated in four 300L mesocosms. The Mesocosms were all floated in Old Fort Pond, Southampton, NY and designed to replicate local lake conditions. Sample fish were studied at ZIRC with all analysis done on a blinded basis. The chart provided presents data and conclusions reached independently by ZIRC staff.





Toxicity testing indicates no meaningful risk at typical dosages

3) In-Vitro Toxicity Testing

Tests conducted by a prestigious 3rd party laboratory determined that TryMarine is safe:

- a) Acute testing: TryMarine was applied at application rates of up to 40x the normal dosage with no effect on survivability of water fleas, fathead minnows, juvenile mussels, rainbow trout, and channel catfish.
- b) Chronic testing: the reproductivity level of water fleas was not impacted at levels below 28x the normal dosage, and growth of fathead minnows and juvenile mussels was not impacted at levels of at least 40x the normal dosage of 1 ppm.

Acute Test – 96 hours	LC ₅₀ (ppm)
Water Flea (<i>Ceriodaphnia dubia</i>), 96-hour Survival	>40
Fathead Minnow (<i>Pimephales promelas</i>), 96-hour Survival	>40
Juvenile Mussel (<i>Lampsilis siliquoidea</i>), 96-hour Survival	>40
Rainbow Trout (<i>Oncorhynchus mykiss</i>), 96-hour Survival	>40
Channel Catfish (<i>Ictalurus punctatus</i>), 96-hour Survival	>40

Chronic Test – 7-days	IC ₂₅ (ppm)	NOEC (ppm)	LOEC (ppm)
Water Flea (<i>Ceriodaphnia dubia</i>), 7-day Survival	>40	40	>40
Water Flea (<i>Ceriodaphnia dubia</i>), 7-day Reproduction	28	20	40
Fathead Minnow (<i>Pimephales promelas</i>), 7-day Survival	>40	40	>40
Fathead Minnow (<i>Pimephales promelas</i>), 7-day Biomass	>40	40	>40
Juvenile Mussel (<i>Lampsilis siliquoidea</i>), 7-day Survival	>40	40	>40
Juvenile Mussel (<i>Lampsilis siliquoidea</i>), 7-day Biomass	>40	40	>40
Juvenile Mussel (<i>Lampsilis siliquoidea</i>), 7-day Length	>40	40	>40

LC₅₀ = Lethal Concentration to 50% of test population

NOEC = No Observable Effect Concentration

IC₂₅ = Inhibition Concentration to 25% of test population

LOEC = Lowest Observable Effect Concentration

Typical application dose = 1 ppm. Toxicity Testing performed by EcoAnalyst, Inc according to EPA-821-R-02-012 and EPA-821-R-02-013 and ASTM International: Designation: E2455 – 22 Standard Guide for Conducting Laboratory Toxicity Tests with Freshwater Mussels.

