

Nitrite NO₂⁻ Test Kit (Nitrocol)

Why test for Nitrite?

Nitrite is another deadly toxin for all pond fish. Nitrite is created by a process of bacterial action and is the “second stage” in the nitrogen cycle. When bacteria convert (oxidize) Ammonia, Nitrite is created before eventually being converted into less harmful Nitrate.

Nitrite is a cumulative poison that is less toxic than Ammonia, though can still be lethal for Koi at 2.0 mg/l if exposed to this level for 1 month or more. The cumulative nature of Nitrite breaks down the red blood cells and oxidizes iron in the haemoglobin into “methaemoglobin” in this state, there is no oxygen carrying capability. This has the effect of turning gills and the blood brown in colour, know as brown blood disease, other symptoms are lethargy, clamped fins, reddening of skin tissues, gasping at the surface of the pond. At exposure levels of 0.5 mg/l irritation can occur causing symptoms of “flicking & flashing”.

Tip: if fish are flashing, rubbing etc. always check Ammonia, ph, & Nitrite levels before medicating for assumed parasite problems particularly after resuming feeding after winter!

Resolving Nitrite issues

The bacteria that convert Nitrite to Nitrate are called *Nitrobacter* in bacterial terms they are very slow to multiply and colonize a pond and bio filter and do not thrive well in the presence of Ammonia, this essential bacterial activity needs to be improved for long term fish safe water. For dangerous levels of Nitrite, salt can be added at 0.6% (1oz per UK gallon) to alleviate brown blood disease while action is taken to resolve the problem.

New systems

High levels of Nitrite are common on new pond and tank systems and can take weeks to reduce to safe levels. If you are testing regularly you will see this increase on the test kit. Nitrite Usually starts to climb after Ammonia comes down. High levels of Nitrite need to be reduced as quickly as possible. Nitrite reduction requires a dual approach, this can be achieved by Water changing (dilution) and adding more filter bacteria. And stop feeding! Change 15 to 20% only of the pond water daily, and use Kusuri filter starter / booster or Bactapur® Klear to supplement filter activity until levels are safe. Do not panic! This can take 2 weeks! Note: Nitrite can “linger” in new systems for up to 1 year even at low levels. A cautious approach to feeding and stocking a new pond is thoroughly recommended.

Established Systems

If Nitrite is present on established systems this needs to be investigated. The most common cause is lack of enough bacterial activity in the filter, this can be caused by undersized or dirty filters, overfeeding, overstocking etc. If you need to constantly change water all the time to maintain safe levels then there is a problem! Early season “spikes” of Nitrite are not uncommon in unheated systems as filter bacteria are temperature sensitive and the amount of bacteria and their activity are greatly reduced after a long winter period. Re boost with filter bacteria and feed cautiously in the early season.

For further advice call Kusuri Products on 01626 836600

<u>HOW TO USE THIS NITRITE TEST KIT</u> <i>(Read thoroughly before testing)</i>				
1.	Rinse test tube with pond water.	<p>Fatal: if not Lowered take action now!</p> <p>Too high: health issues Inevitable lower this level</p> <p>Unacceptable: Long term health Problems, lower this level</p> <p>Caution: Not acceptable as permanent level</p> <p>Safe: maximum safe level for Koi Maturing system will go lower!</p> <p>Ideal: clear Test sample</p>	2.0 mg/l NO ₂ (0.6 mg/l N)	
2.	Fill the test tube with 10 ml of pond water using the syringe supplied		1.0 mg/l NO ₂ (0.3 mg/l N)	
3.	Add one Nitrite tablet and crush tablet with crusher rod, replace cap.		0.5 mg/l NO ₂ (0.15 mg/l N)	
4.	Shake the test tube until tablet has fully dissolved. Allow to stand for ten minutes.		0.2 mg/l NO ₂ (0.06 mg/l N)	
5.	Determine the Nitrite reading by matching the colour of reacted sample with the colour card supplied.		0.1 mg/l NO ₂ (0.03 mg/l N)	
<p>For best results put test tube behind the clear section of the colour test card and offer up to natural daylight. <u>TIP:</u> A plain white background, similar to this instruction sheet offered behind the test tube & colour strip may help enhance the colour match reading.</p>			0.0 mg/l NO ₂ (0.01 mg/l N)	Clear (no tint)