



Using traditional methods free ammonia ([NH3](#)) is very hard to measure so normally people measure non-toxic ammonium ([NH4](#)) in the aquarium and pond and use this as a guide to safe levels of NH3. In true terms NH4 is a nontoxic substance in the aquarium, however due to the equilibrium which occurs between NH3 / NH4 at a given [pH](#) and [temperature](#) it is better to measure NH4 as an indicator of NH3 than nothing at all. Interpretation of NH4 to estimate NH3 is most often done by a chart supplied with the test kit or by a calculation online. If you are using these methods as a guide to NH3 in the aquarium do not expect it to exactly match your seneye. All measurements devices and [test kits](#) will have some error and when you are using 3 different measurements in a calculation a small inaccuracy on each can heavily skew the result. The calculations and look up tables do not take into account ionic strength or air pressure which can both influence the NH3 / NH4 balance.

[A seneye device](#) will measure directly NH3 directly, if you have a seneye reef device you will also get an NH4 widget on your [seneye.me](#) dashboard. To provide this we do a calculation derived from the known pH, temp and NH3 reported by your seneye device. For the same reasons stated above it should only be used as a rough guide.

Please note: Ammonia and ammonium (NH3+NH4) together are usually described as TAN or total ammonia nitrogen. Often test kits measure TAN not NH4 or NH3, this can make accurate NH3 calculations even harder.