

How toxic are your ammonia levels?

****Use the table below to discover exactly how toxic your ammonia levels truly are in your aquarium.****

Information below was found on:

Koi and Water Garden Society; Central New York. "Ammonia Calculator." *Koi and Water Garden Society of Central New York - Cny*. Koi and Water Garden Society of Central New York, 2003. Web. 18 Nov. 2011. <<http://www.cnykoi.com/calculators/calcnh3c.asp>>.

What is 'free' versus 'ionized' ammonia?	Free ammonia (NH ₃ -N) and ionized-ammonia (NH ₄ ⁺ -N) represent two forms of reduced inorganic nitrogen which exist in equilibrium depending upon the pH and temperature of the waters in which they are found. Of the two, the free ammonia form is considerably more toxic to fish and, therefore, we pay considerable attention to the relative concentration of this particular contaminant. Existence of these chemical species are generally viewed as indicators that a given water has been contaminated, usually in relation to the direct discharge of an ammonia-bearing waste (e.g., fish waste, uneaten food, rotting leaves, something dead in system, etc.).
Notes:	The formulas used here are based upon work by Professor James E. Alleman, Purdue University

SEE FULL RELATIONSHIP TABLE ON NEXT PAGE

Table: Amount of actual "Free/toxic" Ammonia in your aquarium with an Ammonia reading of 1 ppm

Temperature		PH >>>														
C	F	6.4	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0	9.2
10.0	50	0.000	0.001	0.001	0.002	0.003	0.005	0.007	0.012	0.018	0.029	0.045	0.069	0.105	0.157	0.228
11.1	52	0.001	0.001	0.001	0.002	0.003	0.005	0.008	0.013	0.020	0.031	0.049	0.075	0.114	0.169	0.243
12.2	54	0.001	0.001	0.001	0.002	0.003	0.006	0.009	0.014	0.022	0.034	0.053	0.081	0.123	0.181	0.260
13.3	56	0.001	0.001	0.002	0.002	0.004	0.006	0.010	0.015	0.024	0.037	0.057	0.088	0.132	0.194	0.276
14.4	58	0.001	0.001	0.002	0.003	0.004	0.007	0.010	0.016	0.026	0.040	0.062	0.095	0.142	0.208	0.294
15.6	60	0.001	0.001	0.002	0.003	0.005	0.007	0.011	0.018	0.028	0.043	0.067	0.102	0.153	0.222	0.311
16.7	62	0.001	0.001	0.002	0.003	0.005	0.008	0.012	0.019	0.030	0.047	0.072	0.110	0.164	0.237	0.330
17.8	64	0.001	0.001	0.002	0.003	0.005	0.008	0.013	0.021	0.033	0.051	0.078	0.118	0.175	0.252	0.348
18.9	66	0.001	0.001	0.002	0.004	0.006	0.009	0.014	0.023	0.035	0.055	0.084	0.127	0.188	0.268	0.367
20.0	68	0.001	0.002	0.002	0.004	0.006	0.010	0.016	0.024	0.038	0.059	0.091	0.136	0.200	0.284	0.386
21.1	70	0.001	0.002	0.003	0.004	0.007	0.011	0.017	0.026	0.041	0.064	0.098	0.146	0.214	0.301	0.406
22.2	72	0.001	0.002	0.003	0.005	0.007	0.012	0.018	0.029	0.045	0.069	0.105	0.157	0.227	0.318	0.425
23.3	74	0.001	0.002	0.003	0.005	0.008	0.013	0.020	0.031	0.048	0.074	0.113	0.167	0.242	0.336	0.445
24.4	76	0.001	0.002	0.003	0.005	0.009	0.014	0.021	0.033	0.052	0.080	0.121	0.179	0.256	0.353	0.464
25.6	78	0.001	0.002	0.004	0.006	0.009	0.015	0.023	0.036	0.056	0.086	0.129	0.191	0.272	0.372	0.484
26.7	80	0.002	0.003	0.004	0.006	0.010	0.016	0.025	0.039	0.060	0.092	0.138	0.203	0.287	0.390	0.503
27.8	82	0.002	0.003	0.004	0.007	0.011	0.017	0.027	0.042	0.065	0.099	0.148	0.216	0.304	0.409	0.523
28.9	84	0.002	0.003	0.005	0.007	0.012	0.018	0.029	0.045	0.069	0.106	0.158	0.229	0.320	0.427	0.542
30.0	86	0.002	0.003	0.005	0.008	0.013	0.020	0.031	0.048	0.075	0.113	0.168	0.243	0.337	0.446	0.561
31.1	88	0.002	0.003	0.005	0.009	0.014	0.021	0.033	0.052	0.080	0.121	0.179	0.257	0.354	0.465	0.579
32.2	90	0.002	0.004	0.006	0.009	0.015	0.023	0.036	0.056	0.086	0.129	0.190	0.272	0.371	0.484	0.597

- 0.0 is ideal. Values up to 0.019 might be tolerated for extended periods
- 0.020 - 0.049 may be tolerated, but may cause long term harm
- 0.050 - .0.199 May be tolerated for a few days, harmful
- 0.200 - 0.499 May be tolerated for a day or two, very harmful
- >0.500 Extremely Toxic, remove fish