Maintaining Proper Water Quality in the Home Aquarium

Drs. Foster & Smith Educational Staff

In addition to properly acclimating your new aquatic life, making sure your tank has all of the appropriate water parameters and environmental requirements the particular species needs is one way to reduce tank mortality.

Freshwater Parameters

The following chart is a general guideline of acceptable water parameter ranges for different types of freshwater aquariums, brackish water aquariums, and ponds. The water parameters listed are a general guideline for maintaining each specific type of aquarium or pond. Some species of fish, plants, or invertebrates may have more specific requirements, so please review each individual species description for more information.

Parameter	Freshwater Community	African Cichlid	Freshwater Plants & Discus	Brackish	Pond
Temperature	72 - 82°F	72 - 82°F	76 - 86°F	72 - 82°F	33 - 86°F
pH	6.5 - 7.5	7.8 - 8.5	6.0 - 7.5	7.5 - 8.4	6.5 - 7.5
Ammonia	0.0	0.0	0.0	0.0	0.0
Nitrite	0.0	0.0	0.0	0.0	0.0

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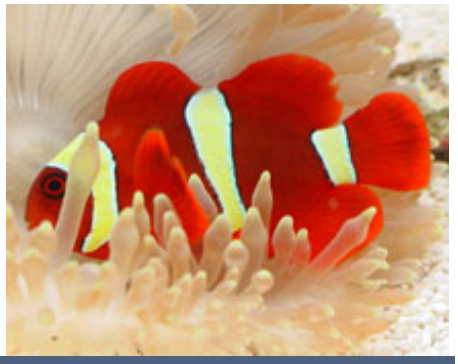
Nitrate	< 50 ppm	< 50 ppm	< 30 ppm	< 50 ppm	< 50 ppm
Alkalinity (Carbonate Hardness)	4 - 8 KH	10 - 18 KH	3 - 8 KH	10 - 18 KH	4 - 8 KH
General Hardness	4 - 12 GH	12 - 20 GH	3 - 8 GH	12 - 20 GH	4 - 12 GH

Marine Parameters

The following chart is a general guideline of acceptable water parameter ranges for different types of tropical marine aquariums. Some types of displays such as FOWLR (Fish Only With Live Rock) aquariums have a broader range of parameters than a reef aquarium. This is due to the delicate nature of corals and invertebrates that are commonly maintained in a reef aquarium. Some species of fish, plants, or invertebrates may have special requirements, so please review each individual species description for more specific information. For reference we have also provided the average water conditions measured on tropical coral reefs across the world.



Parameter	Suggested Level: Reef Aquarium	Suggested Level: FOWLR Aquarium	Average Level: Coral Reefs
Specific Gravity	1.023 - 1.025	1.020 - 1.025	1.025
Temperature	72 - 78°F	72 - 78°F	82°F
pH	8.1 - 8.4	8.1 - 8.4	8.0 - 8.5
Alkalinity	8 - 12 dKH	8 - 12 dKH	6 - 8 dKH
Ammonia (NH3)	Undetectable	Undetectable	Near Zero
Nitrite (NO2)	Undetectable	Undetectable	Near Zero
Nitrate - Nitrogen (NO3)	< 1.0 ppm	< 30 ppm	0.25 ppm
Phosphate (PO4)	< 0.2 ppm	< 1.0 ppm	0.13 ppm
Calcium	350 - 450 ppm	350 - 450 ppm	380 - 420 ppm
Magnesium	1250 - 1350 ppm	1150 - 1350 ppm	1300 ppm

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Iodine	0.06 - 0.10 ppm	0.04 - 0.10 ppm	0.06 ppm
Strontium	8 - 14 ppm	4 - 10 ppm	8 - 10 ppm

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