3-Stage Filtration Overview

Drs. Foster & Smith Educational Staff

Unlike natural aquatic systems, toxic compounds accumulate quickly in an enclosed aquarium system. Without a natural means to efficiently remove these toxic compounds, or wastes, conventional aquariums are dependent upon filtration devices. Filters help create a healthy aquarium environment capable of supporting life. Successful hobbyists understand the basics of aquarium filtration and rely on mechanical, biological, and chemical filtration to process and remove a wide range of toxic compounds.

1 Mechanical Filtration

Mechanical filtration is simply a method of straining out unsightly solids from the aquarium water. As the water passes through, the mechanical media physically trap and remove solids like plant debris, uneaten fish food, and fish waste from the water column. Mechanical filtration does not alter the water chemistry but merely removes solids from the water for a cleaner, clearer appearance.

2 Biological Filtration

Biological filtration involves a series of natural processes in which toxic ammonia is broken down by beneficial bacteria into less toxic components.

As colonies of beneficial bacteria consume ammonia, nitrite is produced as a byproduct. Nitrite is still toxic, but the good news is that a healthy aquarium also contains nitrite-eating bacteria that convert it into less

Power Filters: A Beginner's Best Choice

Most filtration systems today combine at least mechanical and biological filtration. More advanced filters have all three. For beginning aquarists, with small to medium-sized aquariums and a moderate fish load, power filters are unbeatable for convenience and ease of use.

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toxic nitrate. Nitrate levels can be minimized in the aquarium through water changes.

3 Chemical Filtration

Chemical filtration is the process of removing unwanted materials through chemical reactions. Chemical filtration helps remove a variety of impurities in the aquarium, including copper, chlorine, dissolved proteins, medications, discolorations, and tap water impurities.

For chemical filtration to be most effective, water should pass through the mechanical filtration portion of the filter first. This way, the particles reaching the chemical filter are less likely to clog the carbon.

Power filters are moderately priced and are easy to install and maintain. They hang off the back of the aquarium, so they're easy to access for cleaning. Technological advances are making these filters more efficient than ever before; many employ a single cartridge that houses all three media types. Plus, they oxygenate the water and improve aquarium circulation.

Q How often should I replace my filter cartridge?

A Power filter cartridges should be completely replaced at least once a month. They can also be gently rinsed in aquarium water to remove excess buildup of waste material.

ESSENTIALS: MAKE IT SIMPLE

- A single Drs. Foster and Smith Bio3 Filter Cartridge contains mechanical floss, activated carbon, and biological sponge media for complete three-stage filtration.

Power Filters

Canister Filters

Chemical Filter Media

Mechanical Filter Media

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