



STARTING A MARINE REEF AQUARIUM

ABOUT MARINE REEF AQUARIUMS

Your first decision is whether you want a reef or fish aquarium. A reef aquarium is for invertebrates (corals, anemones and crustaceans), and the fish balance the aquarium. A fish aquarium is primarily designed for fish, with modest decorations.

THE EQUIPMENT

You will need six pieces of equipment:

1. **Aquarium.** A larger aquarium allows you to have a greater number of fish and a diverse variety of invertebrates. It also stabilizes the water chemistry because of the larger volume of water.
2. **Heater.** Tropical reef aquariums require a steady water temperature of 76° to 78°F. Fluctuating water temperature stresses fish and invertebrates. High quality aquarium heaters minimize water temperature fluctuations. The heater wattage required will vary depending on the size of your aquarium.
3. **Filter.** Aquarium filters remove suspended debris and harmful pollution while adding oxygen to the water. The larger the filter, the less often you will need to perform maintenance, though most ALL need maintenance 2-4 weeks. Select a filter that has a good flow rate and a large area to hold filter media.
4. **Protein Skimmer.** A protein skimmer improves water quality by removing organic compounds before bacteria decompose them. Make sure to purchase the correct size skimmer for your aquarium.
5. **Lighting.** Lighting in a reef aquarium is essential. In nature, reefs depend on sunlight for growth. Select a light with strong illumination and a timer and keep the lights on for 8-12 hours per day.
6. **UV Lighting.** This water sterilization component is beneficial in the success in keeping marine fish.

WHAT ELSE DO I NEED?

1. **Deionization/Osmosis Filter.** The reef environment is sensitive to even the slightest toxins that may be in tap water. Run all tap water through this filter to remove toxins before adding the water to your aquarium. Ready-made salt water is available at some aquarium stores.
2. **Hydrometer.** Tap water will not have the correct salt content, micro-nutrients, and pH for a saltwater reef. Purchase a hydrometer to measure the salt level of the water in the aquarium. The desired salt level for a reef aquarium is 1.020 to 1.025. Synthetic sea salts are readily available and easy to mix.
3. **pH Test Kit.** Most corals thrive at a pH of 8.2 and calcium level of 400 ppm. In addition to the pH test kit, make sure to purchase products to help set the proper pH and the nutrients needed in the reef.
4. **Live Rock.** When your tank is ready, the first material you will need is "live rock." It's not actually a living rock, but a rock with many creatures living in it. The live rock is what helps to establish a natural balance to handle a full tank of invertebrates and fish.

ESTABLISHING BIOLOGICAL FILTRATION

Biological filtration is simply the action of beneficial bacteria in the aquarium consuming fish waste. All animals release waste into the aquarium water. This waste can build up, especially during the first few weeks of starting a

new aquarium. Fortunately, beneficial bacteria converts waste into harmless nitrate. This bacteria takes time to develop. If too many fish or rocks, or too much food, are added at one time, the ammonia and nitrite levels will reach poisonous levels. To help start the process, we suggest adding beneficial bacteria to the aquarium.

Ammonia and nitrite levels should be tested twice a week for the first few weeks. The levels will rise and fall as the biological filter develops. As the biological filter grows it will convert the ammonia to nitrite and then to nitrate. Once the biological filter is established, ammonia and nitrite will remain at zero levels. It takes about four weeks for the biological filter to become established. A few days after fish are added to the aquarium, the water may turn cloudy. This is normal. In a few days, the cloud will disappear as the aquarium becomes established.

As soon as the biological filter is established, more fish and invertebrates can be added. Add only one or two per week since the biological filter will need to multiply to consume the additional fish waste.

ADDING ANIMALS TO YOUR REEF AQUARIUM

Only add a few animals until the natural balance of the tank has been established.

Whenever fish are netted and handled, their protective slime coat is rubbed off. When adding fish to any aquarium, be sure to add water conditioner to help relieve stress. The best method to add new fish is to float the unopened bag of fish in the aquarium until the water temperature in the bag matches the tank's (about 15-20 minutes). Then, open the bag and add water by drip or cups every 5 minutes for an hour before gently releasing the fish. The bag water may contain fish waste (ammonia), so try to avoid adding the bag water to the aquarium.

PROPER FEEDING

Many corals are photosynthetic and have unique requirements depending on the species, such as lighting and micronutrients. The addition of calcium, iodine, and magnesium is essential for some corals. Use readily available products on the market to add the essential micronutrients your coral needs to thrive.

It is best to feed your saltwater fish only the food that it can eat. If food is sitting on the bottom of the aquarium, the fish have been overfed. Overfeeding promotes fish waste (ammonia) building up to a harmful level and is one of the major causes of fish loss.

CLEANING YOUR AQUARIUM

Dirty aquariums are unhealthy for fish. To help keep algae under control, select fish and snails that prefer algae as their primary food source. Follow these maintenance steps to keep your aquarium clean and safe:

Weekly: Test the pH, ammonia, nitrite, and salt levels. Regular water testing is the only way to monitor water quality in the aquarium. The pH level may shift over time and require an adjustment. The ammonia and nitrite levels should always be zero.

Monthly: Clean the filter and add new Activated Carbon. Change about 20% of the water. Partial water changes remove excess pollutants and algae-promoting nutrients. The easiest way to make a partial water change is with a gravel siphon. Gravel siphons remove debris from the substrate while removing unwanted pollutants from the aquarium. When adding new water, be sure to use a water conditioner, add the correct amount of salt to reestablish the proper salt level, and test the pH level before adding to the aquarium. Clean the inside of the aquarium with an algae scraper.

Remember that this is just a guide to get you started. Please consult your marine fish store for more detailed advice in setting up your tank.