Protect Your Aquarium from Household Hazards: How to Aquarium Proof Your Home

Drs. Foster & Smith Educational Staff

Pet owners often speak of puppy proofing or kitten proofing their homes, but homes need to be aquarium-proofed as well to protect tank inhabitants as well as people and other pets. Potential hazards include:

- Electricity
- Other pets and children
- Water supply
- Chemicals
- Air pollution
- Earthquakes

The following tips can help you keep your aquarium and household members safe:

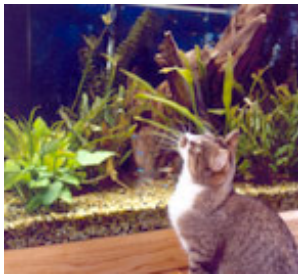
Electricity

Electricity and water are a dangerous combination. To protect you and the fish, ground all electric cords and use ground fault interrupted (GFI) outlets. One drawback of these outlets is that they are very sensitive and even the tiniest amount of stray voltage can trip them rendering a loss of power. When using these devices, make sure they are installed by a professional and ensure that all of your electrical equipment is functioning properly and appropriately sized.

When plugging cords into an outlet (or power strip), be sure part of each cord hangs below the outlet. This will prevent water from running down the cord directly into the outlet. It is very important when using power strips, that they are mounted in a vertical fashion to reduce the chance of water entering the strip. This is especially important for saltwater aquariums, as saltwater is very conductive and will cause a power strip or outlet to start on fire.

Periodically check all wires, bulbs, and heaters for any cracks or breakages. If you will be removing more than 2 inches of water from your aquarium, remember to unplug the aquarium heater first to prevent breakage. Allow it to cool for at least 15 minutes to prevent burns if you accidentally touch it.

Other pets and children



Non-fish pets can be hazardous to aquariums. Dogs may tip over an aquarium, especially if it is not on a sturdy stand. Cats, ferrets, and birds may find the aquarium inhabitants very appetizing.

Young children can pose safety concerns for aquariums. They may inadvertently tip them over when playing next to them or by trying to climb up to see the tank inhabitants. Children may also try to add things to the aquarium – their own food, toys, or items they see you introduce into the aquarium such as fish food, medications, or supplements. For the safety of the children and your aquarium keep all aquarium supplies out of the reach of children.

Be sure the aquarium is on a sturdy stand, and if necessary, secured to a wall. Use an aquarium stand that fits the aquarium and has been specifically manufactured to support aquariums. Keep a tight-fitting lid on the tank. Securing the lid with a bungee cord or similar device may help prevent children from removing it.

Water supply

The first place to start in keeping your aquarium toxin free is evaluating your water source. Municipal or city water is commonly treated with chlorine that inhibits bacterial and algae growth within the water lines. Chlorine is toxic to fish and other aquarium inhabitants. It can also kill bacteria, which will have a negative impact on the biological filtration of the aquarium. In addition to chlorine, chloramines may be present, which are also toxic. When performing water changes using untreated city water, the chlorine will kill off a percentage of the bacteria within the filtration system resulting in an increase in ammonia and nitrites. These two chemicals are extremely toxic to the aquarium, and should always be maintained as close to zero as possible.

To remedy the problem of chlorine in the water, consider:

- Chemical conditioners: There are many available tap water conditioners, such as Stress Coat or AmQuel, which will quickly detoxify chlorine and heavy metals that are within the water.
- Physical removal: Another procedure to remove chlorine is to simply aerate the water with an air pump and stone for a few days prior to use. This will dissipate the chlorine into the atmosphere making it safe for aquarium use. However, this method will not remove any heavy metals that are contained within the water, and should only be used with source water that does not contain high concentrations of these metals.

*Unauthorized use of any images, thumbnails, illustrations, descriptions, article content, or registered trademarks of **Foster & Smith, Inc.** is strictly prohibited under copyright law. Site content, including photography, descriptions, pricing, promotions, and availability are subject to change without notice. These restrictions are necessary in order to protect not only our copyrighted intellectual property, but also the health of pets, since articles or images that are altered or edited after download could result in misinformation that may harm companion animals, aquatic life, or native species.*

- Water purification: The final method of purifying tap water will not only remove toxins from the water, but also other impurities that are contained within the water. This method involves using a water purifier. Many types of water purifiers are commercially available, and they range in both price and efficiency.
    - DI purification units: A simple DI (De-Ionization) unit is very economical and will remove chlorine and many other impurities as well as metals from the water. These systems are very inexpensive up front, but the frequency of cartridge changes can make them impractical if treating large amounts of water. The amount of water that can be produced in between cartridge changes will vary on the purity of your source water.
    - RO purification units: Reverse Osmosis (RO) units are the most efficient at removing a wide range of impurities from tap water, and can be combined with a DI cartridge to provide water that is over 99% pure. This method of purification is ideal for aquariums that are heavily stocked such as freshwater planted and saltwater reef aquariums. For more information on RO units (see our article Reverse Osmosis: Selecting a Unit).

Please note: Some municipalities within the United States will "shock" the water lines a few times a year in order to combat bacterial and/or algae blooms within the water system. This is typically done in the warmer climates within the southern states. A simple phone call to your municipality will alert you as to what time of year this will occur, as well as the type of chemical that will be used. If you do not use either a DI or RO unit, it is advised to use bottled water during these periods of municipal maintenance.

If you are moving into a newly constructed home, and the water lines are copper, these lines will leach copper into the water for a short period of time until the lines oxidize and become stable. Only use water from this new home if you are treating it with a DI or RO unit for the first few months. A simple water test kit for copper will indicate as to when the water becomes safe for you to use.

Chemicals

Always follow the manufacturer's recommendations on the storage and use of salt, chemicals, trace elements, medications, and other chemicals. Make sure you know how to accurately calculate how much of these you need to add to the aquarium, and how often. Store all chemicals out of the reach of children and pets.

There are a number of common chemicals that can become very toxic if mixed together. Mixing bleach and ammonia, for example, can produce toxic chlorine gas. Do not mix aquarium chemicals unless the manufacturers have assured you that the chemicals are compatible.

When placing your hands inside of an aquarium, wear gloves. Lotions, residual soap, or chemicals on your hands and arms can be introduced into the aquarium and potentially contaminate the water. Always wash your hands well after servicing your aquarium, also.

Evaluate your water source and use the appropriate chemical or filtering methods to remove possible contaminants.

Fluorescent bulbs contain mercury, so care should be taken to prevent breakage and to properly dispose of used bulbs. Find out if there is a household hazardous waste collection program that will accept these.

Air pollution

Airborne contaminants are the most overlooked and underestimated toxin source for an aquarium. They include a wide range of sources from common household cleaners, to remodeling activities, to invasive pest control.

- Household cleaners: Common household cleaners and aerosols such as glass, wood, and oven cleaners, as well as deodorants and air fresheners release an airborne mist of tiny droplets of the chemical of which it is made. If these products are used in close proximity to the aquarium, they enter the water and quickly turn into ammonia. This will cause a drop in the water's pH as well as stress on the aquarium's inhabitants. Even in small amounts, this ammonia over time can lead to algae problems, as it provides added nutrients for the various forms of microalgae.
- Remodeling activities: Remodeling activities including painting, staining, the production of airborne dust, and any chemical that causes a strong odor, will have the same results as the cleaners and aerosols mentioned above. Airborne dust is less dangerous to the system, but it can be a major contributor to the phosphate level in the aquarium, leading towards even more problems with algae.
- Pest control: Fumigating and using bug bombs to rid your house of pests and insects is more of a serious situation, as the chemical used will stay within the air for a longer period of time. It is best in this situation to move the aquarium out of the treated environment. This may not be possible with a larger or heavily stocked aquarium like a saltwater reef aquarium.

The best solution to these airborne contaminants is to avoid using them. When cleaning around the aquarium, do not spray the cleaner into the air. Instead, spray the cleaner into a cloth and wipe it onto the surface. If cleaning in the kitchen, close off the

*Unauthorized use of any images, thumbnails, illustrations, descriptions, article content, or registered trademarks of **Foster & Smith, Inc.** is strictly prohibited under copyright law. Site content, including photography, descriptions, pricing, promotions, and availability are subject to change without notice. These restrictions are necessary in order to protect not only our copyrighted intellectual property, but also the health of pets, since articles or images that are altered or edited after download could result in misinformation that may harm companion animals, aquatic life, or native species.*

area where you are cleaning, and turn on any exhaust fans that are present.

If the airborne toxins are unavoidable and will remain in the air for only a few hours or less, simply cover the aquarium and the filtration system with plastic sheeting or a plastic wrap to keep the contaminated air out of the system. If remodeling, follow the above recommendations, and provide the aquarium with fresh activated carbon.

Pest control, using a fumigation procedure is going to present the most problems. Many of these products or services will saturate the air for many hours or even days at a time. If it is not possible to move the aquarium, the only choice that you may have is to completely seal the aquarium with plastic so it is airtight. An aquarium will not survive for very long without oxygen, so an oxygen source is mandatory in this case. One solution to this problem would be to locate an air pump outside of the house, and to pump fresh air into the bubble that you have created around your aquarium. Make sure that the air pump is strong enough to push the air through the amount of tubing that is necessary to reach the aquarium. If using this method, you will also need to run a second airline from the aquarium back outside to provide venting.

Earthquakes

In areas where earthquakes are common, special precautions need to be taken. Some aquatic experts have advocated that acrylic tanks are less likely to break or leak than glass tanks should an earthquake occur. Secure your aquarium to a stand that has a lip on all four sides. Bolt the stand to the walls and floor. Secure other equipment, such as skimmers, to the stand as well.

*Unauthorized use of any images, thumbnails, illustrations, descriptions, article content, or registered trademarks of **Foster & Smith, Inc.** is strictly prohibited under copyright law. Site content, including photography, descriptions, pricing, promotions, and availability are subject to change without notice. These restrictions are necessary in order to protect not only our copyrighted intellectual property, but also the health of pets, since articles or images that are altered or edited after download could result in misinformation that may harm companion animals, aquatic life, or native species.*