



# Filtration and Aeration explained.....



## FILTRATION

### Classification:

**Mechanical** - removes large particulate matter by trapping (e.g. filter wool, prefilters, etc.).

**Chemical** - removes dissolved wastes by chemical means (e.g. activated carbon, zeolite, etc.).

**Biological** - provides a substrate for nitrifying bacteria in order to remove nitrogenous wastes (e.g. filter sponge, ceramic beads, aqua-clay, bio-balls, trickle filter).

\*all types of filter units have, to a certain extent or other, all the above qualities.

**Types available:** internal box (filter wool mechanically filters the water, while the activated carbon absorbs wastes); undergravel (utilises the large area and volume of gravel to provide substrate for nitrifying bacteria to purchase); internal or external power filter & sponge filter (provides substrate for nitrifying bacteria and mechanically traps large particulate wastes).





## AERATION vs CIRCULATION

Circulation describes water movement. This is achieved by paddle wheels in large ponds or through the use of powerheads in aquarium set-ups. In such cases, gases can only exchange at the surface. Aeration involves the 'injection' of oxygen/air into the water. This is achieved by air stones powered by pumps. Oxygen is able to dissolve and carbon dioxide evolve around each tiny air bubble. These rising air bubbles also creates a lift and thus circulate the water too.

For more detailed information contact [The Fish Vet](#)

### **Dr Richmond Loh**

*DipProjMgt, BSc, BVMS, MPhil (Pathology) Murdoch,  
MANZCVS (Aquatics & Pathobiology), CertAqV, NATA Sig.*  
**Aquatic Veterinarian & Veterinary Pathologist**  
Perth, Western Australia, AUSTRALIA

