

STONEHILL
COLLEGE
Aquarium Water Setup SOP

General Notes:

- All water barrels have their volumes stamped on the top of the rim by the manufacturer.
- All barrels are labeled to indicate which species and which tanks they are to be used for.
- Sodium bicarbonate is used in water prep to increase the buffering capacity of the DI water which will help the water maintain the pH and alkalinity
- Calcium chloride is used to adjust hardness to the desired reading
- All barrels are given an aerator at time of make-up
- All barrels are given heaters set at desired temperature as indicated for each below.

Xenopus:

Notes: There are separate water barrels, 55 gallon tanks for filtering the tap water, and pumps to move the water from the 55 gallon tanks to the barrels, for each researcher.

1. Fill the 55 gallon tank with cold **tap** water. (Hot often comes out browner)
2. Add Amquel as per instructions on bottle (1 capful/10 gal)
3. Add Novaqua as per instructions on bottle (1 capful/10 gal)
4. Add Proper pH 7.0 as per instructions on bottle (1 scoop/10 gal)
5. Let the water filter for several hours and then pump it into one of the barrels.
6. Filters need to be cleaned approximately once a month.

Saltwater: (including sandlances)

1. Fill the barrel with **D.I.** water.
2. Add instant ocean sea salt to achieve a reading of 1.021-1.023 on the refractometer or 30-32 ppt on the YSI, depending on the intended use.
3. This usually takes about 6-7 cups of salt

Zebrafish:

Notes:

- The aging zebrafish are being kept at 26C, so change-water should be kept at this temperature.
 - All other zebrafish are kept at 28.5C so change-water should also be at this temperature.
 - There are different water barrels for the zebrafish to allow for these two temperature differences as well as a separate barrel for the Z-rack.(see Rack top-off water)
1. Fill the barrel with **D.I.** water.
 2. Add sodium bicarbonate to adjust the buffering capacity or carbonate hardness to ~120ppm. For a 40 gallon barrel, this takes approximately 10 grams sodium bicarbonate. Also add 9 grams of instant ocean sea salt. Let this mix for at least 30 minutes.
 3. Next use calcium chloride to adjust the hardness to ~25-75. This takes approximately 3 grams of calcium chloride.
 4. Wait at least 24 hours before use.

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5. Test the pH before use. It should be 7.0-7.4

Rack top-off water

1. Fill the 20 gallon tank with **D.I.** water
2. Add 4 grams sodium bicarbonate. Let sit 30 min.
3. Add 1.5 grams of calcium chloride.
4. Again, wait 24 hours before testing for pH (7.0-7.4), and using.

Goldfish:

Notes:

-Freshwater aquarium salt is added directly to the goldfish tanks after a water change, rather than adding it to the premixed water in the barrel.

1. Fill a *30 gallon* barrel with **DI** water.
2. Add sodium bicarbonate to achieve a carbonate hardness of ~120ppm. This takes about 19 grams of sodium bicarb. Let sit at least 30 minutes.
3. Next use sodium biphosphate to lower the pH to ~7.2-7.6. This requires ~25 grams. Note-if pH is tested immediately the reading will be much lower. Let the water sit ~24 hours and the pH will rebound some and stabilize at ~7.2-7.6.
4. Test pH before use to be sure it's 7.2-7.6
5. If tank pH is not maintaining the amounts of sodium bicarb and sodium biphosphate may need to be adjusted. Also the pH of the change water may need to be adjusted down closer to the pH of the tank until that can be brought back up, so that the fish are not shocked during a water change.

If a *40 gallon* barrel is used

1. Fill barrel with DI water
2. Add ~25 grams sodium bicarbonate. Let sit ~30 minutes
3. Add 35 grams sodium biphosphate.
4. Test pH before use.

Cichlids

Notes: The cichlids that we had were African from Lake Malawi, so when adding the cichlid lake salts make sure to use the amount for the right lake

1. Fill 30 gallon barrel with tap water from horseshoe crab room
2. Add amquel and novaqua per instruction on the bottles
3. Add 16.5 grams of cichlid lake salts
4. Add 6 grams of sodium bicarbonate
5. Add 3 grams of calcium chloride

Cichlid top-off water

Notes: Do NOT add cichlid lake salts

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1. Fill 20 gallon barrel with tap water from horseshoe crab room
2. Add amquel and novaqua
3. Add 4.5 grams of sodium bicarbonate
4. Add 1 gram of calcium chloride