I Killed My Goldfish! & Soap Scum

Lab Prep Instructions

***GENERAL INFORMATION***

Experiment Day/Date:

Instructions: Write any calculations in the space provided, and check with the lab instructor if you have any questions. Check off each item as you prepare it.

Quantity: Amounts indicated are for a pair of students. For solutions that everyone needs, prepare enough for 18 pairs of CH 106 students. For those that are only needed by a few groups, prepare enough for the number of groups using it + 2 more.

***SOLUTIONS AND CHEMICALS NEEDED***

□ 0.25 M HCl (hydrochloric acid) enough for all groups

□ 0.25 M NaOH (sodium hydroxide) enough for all groups

□ 0.25 M CH3COOH (acetic acid), 5 groups

□ 0.25 M C2H3NaO2 (sodium acetate) 5 groups

□ 0.25 M NH3 (ammonia) enough for 5 groups

□ 0.25 M NH4Cl (ammonium chloride) enough for 5 groups

□ 0.25 M Histidine enough for 5 groups

□ 0.25 M Histidine HCl • H2O enough for 5 groups

***SOLUTION PREPARATION***

□ 10 mL of 0.25 M HCl (hydrochloric acid)

**All groups will need this solution.**

- dilute solution from concentrated (12.1 M) HCl in DI water and store in a **clear** glass bottle



- please round volume of 0.25 M HCl needed to match the nearest volumetric flask volume available

(i.e. to the nearest 500 mL or 1 L). Amount of 0.25 M HCl to prepare: \_\_\_\_\_ mL



□ 10 mL of 0.25 M NaOH (sodium hydroxide)

**All groups will need this solution.**

- prepare solution from the solid (FW 40.00 g) and dilute in DI water and store in a **clear** glass or plastic bottle (Note: may use 50% wt/wt NaOH instead which doubles the mass to be added.)



-please round volume of 0.25 M NaOH needed to match the nearest volumetric flask volume available (i.e. to the nearest 500 mL or 1L). Amount of 0.25 M NaOH to prepare: \_\_\_\_\_\_\_ L



□ 60 mL of 0.25 M acetic acid

- dilute solution from concentrated (17.4 M, glacial, or 99.8%) acetic acid in DI water and store in a **clear or brown** glass bottle



- please round volume of 0.25 M acetic acid needed to match the nearest volumetric flask volume available (i.e. to the nearest 500 mL or 1 L). Amount of 0.25 M acetic acid to prepare: \_\_\_\_\_ mL

 

□ 50 mL of 0.25 M C2H3NaO2 (sodium acetate)

- prepare solution from the solid (FW 82.03 g/mol) and dilute in DI water and store in a **clear or brown** glass bottle



- please round volume of 0.25 M C2H3NaO2 needed to match the nearest volumetric flask volume available (i.e. to the nearest 500 mL or 1 L). Amount of 0.25 M C2H3NaO2 to prepare: \_\_\_\_\_ mL



□ 50 mL of 0.25 M NH3 (ammonia)

- dilute solution from 15.0 M (28%) ammonia in DI water and store in a **clear or brown** glass bottle



- please round volume of 0.25 M NH3 needed to match the nearest volumetric flask volume available (i.e. to the nearest 500 mL or 1 L). Amount of 0.25 M NH3 to prepare: \_\_\_\_\_ mL



□ 60 mL of 0.25 M NH4Cl (ammonium chloride)

- prepare solution from the solid (FW 53.49 g) and dilute in DI water and store in a **clear or brown** glass bottle



-please round volume of 0.25 M NH4Cl needed to match the nearest volumetric flask volume available (i.e. to the nearest 500 mL or 1L). Amount of 0.25 M NH4Cl to prepare: \_\_\_\_\_ mL



□ 60 mL of 0.25 M Histidine

- prepare solution from the solid (FW 155.15 g) and dilute in DI water and store in a **clear or brown** glass bottle



-please round volume of 0.25 M histidine needed to match the nearest volumetric flask volume available (i.e. to the nearest 500 mL or 1L). Amount of 0.25 M histidine to prepare: \_\_\_\_\_\_mL



□ 60 mL of 0.25 M Histidine HCl

- prepare solution from solid Histidine HCl • H2O (FW 209.63 g) and dilute in DI water and store in a **clear** glass bottle



-please round volume of 0.25 M histidine HCl needed to match the nearest volumetric flask volume available (i.e. to the nearest 500 mL or 1L). Amount of 0.25 M histidine HCl • H2O to prepare: \_\_\_\_ mL



***EQUIPMENT & GLASSWARE***

 **For Soap Scum In Lab Bins**:

□ 10 mL volumetric flask (1)

□ fat test tubes (5)

□ fat test tube racks, 4-way plastic (2)

□ 1000 μL micropipette (1)

□ 400 mL beaker (1) (for waste)

**For Soap Scum In Lab Bins**:

□ 30 or 50 mL beakers (2)

 **For Soap Scum In Dana 201:**

□ In hoods everything except HCl & NaOH each on own safety tray with labeled 30 mL beaker

□ Milli-Q H2O

□ pH meter & instruction sheet (1/group)

□ pH 4 and 7 buffers in labeled vials next to each pH meter (1/group)

□ 1000 μL pipet tips

**Additional For Goldfish In Dana 201:**

□ buret and small waste beaker for each chemical from 1st week, labeled

□ HCl & NaOH on separate trays

□ burets and beakers for Milli-Q H2O (2)

***WASTE DISPOSAL CONTAINERS***

€ Building: Dana

€ Room #: 201

€ Waste Accumulation Start Date: 10/24/2013

€ Date Container Filled: leave blank

€ Date moved to MAA: leave blank

€ Physical State(s): liquid

€ Chemical Waste Composition: hydrochloric acid (< 1%), sodium hydroxide (< 1%), ammonia (< 1%), ammonium chloride (< 1%), acetic acid (< 1%), sodium acetate (< 1%), histidine (< 1%), histidine HCl monohydrate (< 1%), water (~ 99%)

€ Hazards: toxic, corrosive

***SPECIAL INSTRUCTIONS***