



CHEM Recipes

Chemistry 326 IEPs

6.05% 8-Hydroxyquinoline

Prepare as %w/w in 2M acetic acid. Use low heat and a stir bar. Do not heat volumetric flasks.
Prep time: approximately 1 hour.

HPLC Mobile Phase (60% Acetonitrile, 25% pH 7 Buffer, 15% Methanol)

Use only HPLC grade solvents**. Combine methanol and buffer first. Then add acetonitrile.

**All solvents used for this experiment MUST be spectrophotometric, or HPLC, grade.

Horse Serum

Because this is sterile, we would like to furnish it ONLY at the time it is needed. It is kept frozen until that time. Therefore, much like unknowns, you will need to request it at least 24 hours ahead of time so we may defrost and dispense it for you.

HPLC "Unknowns"

These contain horse serum, so we must treat them as described above. Please request them at least 24 hours in advance.

Buffer, pH 1-2*

Prepare a 0.2M solution of KCl. Then use 0.2M HCl to adjust the pH.

Buffer, pH 3-4*

Prepare a 0.1M solution of KHP. Then use 0.1M HCl to adjust the pH.

Buffer, pH 5*

Prepare a 0.1M solution of KHP. Then use 0.1M NaOH to adjust the pH.

Buffer, pH 6*

Prepare a 0.1M solution of KH_2PO_4 . Then use 0.1M NaOH to adjust the pH.

Buffer, pH 7-8

Prepare a 0.1M of Na_2HPO_4 (do not use the sodium salt for HPLC experiments). Then use 4M H_3PO_4 to adjust the pH to 7.

Buffer, pH 9-10*

Prepare a 0.025M solution of borax. Then use 0.1M HCl to adjust the pH.

Buffer, pH 10-11*

Prepare a 0.05M solution of borax. Then use 0.1M NaOH to adjust the pH.

Buffer, pH 12

Prepare a 0.15M solution of Na_2HPO_4 . Then use 6M NaOH to adjust the pH to 12.

*Recipes taken from the CRC Handbook.

Thymol blue, $3.0 \times 10^{-4}\text{M}$

Recrystallized thymol blue (MW = 466.6 g/mol) is used. It is available only in small quantities. Use drops of 0.1M HCl to aid in dissolution. Cover top of flask with parafilm to seal, then cover the whole flask with aluminum foil to protect the solution from the light. This may need to stir overnight to completely dissolve.

Potassium dichromate, 52.9xxxg/L

Dry solid in a dessicator overnight before prepping.

Stannous chloride, 2.0M

This must be made fresh. To make 1 liter, dissolve 450g $\text{SnCl}_2 \cdot 2\text{H}_2\text{O}$ in 680ml 12M HCl (USE CAUTION!!!) in a large beaker. Allow 30 minutes while stirring on low heat for dissolution. Once dissolved, bring the volume to 1 liter (w/12M HCl). Add tin metal to the bottle. Cap with a venting cap. NOTE: Do NOT heat volumetric glassware.

1:2 18M H_2SO_4 :16M H_3PO_4

Prep directly in ground glass bottles in an ice bath.

Mercury (II) chloride, 0.2M

WEAR GLOVES as the reagent is poisonous and readily absorbed through the skin. Clean up any spills immediately!

Dissolve 54.3 g/L in water, stirring on low heat. This is close to the solubility limit, so dissolution takes awhile, usually 30 minutes or more.

Dristan Reagents

PAM, PEH, and Dristan solution must be prepared in 0.012M HCl.

Unknowns:

Aluminum: Do not bake out.

KHP: Bake at 110°C for one hour no more than 48 hours prior to use.

Chloride: for two hours no more than 48 hours prior to use.

Iron: Bake at 120°C for one hour no more than 48 hours prior to use.

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