

CHE 134 Material list Summer 2021

Lesson – Getting Started

Student Provided

1	Pen or pencil
1	Sheet of paper

Lesson – Safety

Student Provided

1	Pen or pencil
1	Sheet of paper

Experiment 1 – Kinetic Blues: Reaction Order and Rate Laws

Student Provided

1	Container of distilled water
1	Tap water (warm and cold)
1	Clock with second hand or timer on smartphone
1	Ice (crushed if possible)
1	Intense light source (sunlight)
1	Dish soap
1	Sheet of white paper
1	6-8 oz mug or cup
1	Scissors
1	Paper towel

Periodic Wonders Provided

1	Pair of gloves
1	Safety goggles
1	Test tube cleaning brush
1	Well plate, 24 well cell
1	Thermometer
2	Styrofoam coffee cups, 6 oz.
1	Glass vial with pop-cap, 8 mL
1	Experiment bag: Kinetic Blues: Reaction Order and Rate Laws

1	Fructose, 0.2 M in pipet 2 mL
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1	Sodium Hydroxide, NaOH - 0.5 M, 30 mL in dropper bottle
1	Methylene Blue Indicator – 0.02%, 2 mL in pipet
1	Short stem transfer pipet

Experiment 2 - Chemical Equilibrium and Le Chatelier's Principle

Student Provided

1	Dish soap
2	Coffee cup (can use Styrofoam cups from Experiment 1)
1	Roll of paper towel
1	Tape (any type, i.e., masking, packing, scotch etc.)
1	Scissors
1	Ice
1	Tap water

Periodic Wonders Provided

1	Pair of gloves
1	Safety goggles
1	Test tube cleaning brush
1	Well plate, 24 well cell
1	Experiment bag: Chemical Equilibrium and Le Châtelier's Principle
3	Short stem transfer pipet
1	Hydrochloric Acid, HCl - 2 M, 2 mL in pipet
1	Iron (III) nitrate, $\text{Fe}(\text{NO}_3)_3$ - 0.1 M, 2 mL in pipet
1	Potassium chromate, K_2CrO_4 - 1 M, 2 mL in pipet
1	Potassium ferrocyanide $\text{K}_4\text{Fe}(\text{CN})_6$ - 0.2 M, 2 mL in pipet
1	Sodium hydroxide, NaOH - 2 M, 2 mL in pipet

Experiment 3 - Environmental Issues: Acid Base Chemistry in the Atmosphere

Student Provided

1	Container distilled water
1	Tap water
1	Seltzer water, 25 mL (~ 2 tablespoons)
1	Clock with second hand or timer on smartphone
1	Ice
1	Dish soap
1	Printer
1	Camera, smartphone or digital
1	Sheet of white paper

1	Roll of paper towel
1	Scissors

Periodic Wonders Provided

1	Pair of gloves
1	Safety goggles
2	pH test strip
1	Test tube cleaning brush
1	Well plate, 24 well cell
1	Petri dish
1	Beaker, 100 mL
1	Experiment bag: Environmental Issues - Acid Base Chemistry in the Atmosphere

1	Sulfuric acid, H_2SO_4 - 2 M, 2 mL in pipet
1	Ammonia, NH_3 - 2 M, 2 mL in pipet
1	Bromocresol green indicator – 0.2%, mL in pipet
1	Sodium bicarbonate, NaHCO_3 – 0.05 M, 2 mL in pipet
1	Sodium nitrite, NaNO_2 – 0.5 M, 2 mL in pipet
2	Short stem transfer pipet

Experiment 4 - Determination of K_a for an Unknown Weak Acid

Student Provided

1	Container of distilled water
1	Tap water
1	Dish soap
1	Roll of paper towel
1	Scissors
1	Cup or glass
1	Sheet of white paper

Periodic Wonders Provided

1	Pair of gloves
1	Safety goggles
1	Beaker, 100 mL
1	Graduated cylinder, 25 mL
1	pH test strip, 32 pieces
1	Well plate, 24 well cell
1	Test tube cleaning brush

1	Experiment bag: Determination of K_a for an Unknown Weak Acid
1	Phenolphthalein solution - 0.5%, 0.5 mL in pipet
1	Sodium Hydroxide, NaOH - 1.0 M, 30 mL in dropper bottle
1	Unknown – 25 mL in dropper bottle
1	Short stem transfer pipet

Experiment 5 - Buffers

Student Provided

1	Container of distilled water
1	Tap water
1	Box of toothpicks
1	Dish soap
1	Scissors
1	Roll of paper towels
1	White vinegar, 120 mL (~1/2 cup)

Periodic Wonders Provided

1	Pair of gloves
1	Safety goggles
2	Graduated pipet, 3 mL
1	Permanent marker
1	Well plate, 24 well cell
1	pH test strip, 54 pieces
2	Short stem transfer pipet (or substitute)
1	Test tube cleaning brush
1	Experiment bag: Buffers
1	Hydrochloric acid, HCl - 6 M, 5 mL in dropper bottle
1	Sodium Hydroxide, NaOH - 6 M, 5 mL in dropper bottle

Experiment 6 – Hydrolysis of Acetylsalicylic Acid (Aspirin)

Student Provided

1	Container of distilled water
1	Camera, smartphone or digital

1	Dish soap
1	Metal spoon (teaspoon or tablespoon)
2	Sheets of white paper
1	Scissors
1	Tap water

Periodic Wonders Provided

1	Pair of gloves
1	Safety goggles
1	Permanent marker
1	Spatula
1	Well plate, 24 well cell
1	Graduated cylinder, 25 mL
2	Test tubes, 16 x 125 mm
1	Test tube cleaning brush
1	Experiment bag: Hydrolysis of Acetylsalicylic Acid (Aspirin)
2	Aspirin tablets, 325 mg each
1	Iron(III) chloride, FeCl_3 - 2 M, 2 mL in pipet
1	Long thin stem pipet