Chem 210 Exp. 7

Extraction of Acids / Bases & the Isolation of Caffeine from Coffee, Tea, & Cola Syrup

Microscale / Partition Coefficient of Benzoic Acid

Chemical Name	Per Student	Per Class (20)	Location
Benzoic Acid	0.1 g	2.4 g	Organic solids shelf
Dichloromethane / Methylene Chloride	3 mL	75 mL	Flammable cabinet (last room)
Calcium Chloride pellets, anhydrous	0.6 g	15 g	Inorganic solids shelf

7.1 Microscale/Separation of Carbolic acid, a Phenol, and a Neutral Substance

Chemical Name	Per Student	Per Class (20)	Location
Benzoic Acid (50/50 ¼ Dimethoxybenzene)	60 mg	10 g	Organic solids shelf
Diethyl Ether		2 bottle	Flammable fridge (first room)
Sodium Bicarbonate, Saturated		50 mL	Inorganic liquids shelf
NaCl, Saturated		25 mL	Inorganic liquids shelf
Calcium Chloride pellets, anhydrous		50 g	Inorganic solids shelf
HCl, concentrated		15 mL	Acid Cabinet 3 (by fridge)
Methanol, Methyl Alcohol		50 mL	Flammable Cabinet (last room)

7.6 Macroscale / Extraction of Caffeine from Tea

Item/ Chemical Name	Per Student	Per Class (20)	Location
Tea bags	1+	48	Student supplied
Sodium Carbonate		250 g	Inorganic solids shelf
Dichloromethane, Methylene Chloride		1000 mL	Flammable Cabinet (last room)
Acetone		500 mL	Flammable Cabinet (middle room)
Ligroin / Petroleum Ether (bp 60-80)		500 mL	Flammable Cabinet (last room)
Calcium Chloride pellets, anhydrous		500 g	Inorganic solids shelf
Ice			Next to fridge
Boiling chips		1 bottle	Ochem shelf #1

Solution Preparation

Saturated Sodium Chloride

$$375\ g\ NaCl\ per\ 1000\ mL\ of\ H_2O$$

Saturated Sodium Bicarbonate

$$9.6\ g\ NaHCO_3 + 90.4\ ml\ H_2O = 100\ ml\ solution$$