**Diels-Alder Reaction p. 492-496**

**Part 1**

* Dicyclopentadiene~~~ Nasty, wear gloves!!!
* Ice

**Part 2**

* Maleic anhydride
* Ethyl acetate
* Ligroin or hexane
* Calcium chloride pellets

**Part 3**

* Boiling chips

**Part 4**

* Concentrated sulfuric acid
* Sodium carbonate

**Nitration of Methyl Benzoate p. 310-312**

* Concentrated sulfuric acid
* Ice
* Methyl benzoate
* Concentrated nitric acid
* Ice-cold methanol
* Sodium carbonate

**Friedel-Crafts Alkylation of Benzene p. 316-324**

**Part 1**

* 2-chloro-2-methylpropane AKA (t-butyl chloride)
* Benzene
* Ice
* Aluminum chloride or iron (III) chloride
* Ether
* Saturated sodium chloride
* Anhydrous calcium chloride
* Methanol
* Ice-cold methanol
* Thiourea
* 1,4-di-t-butylbenzene
* Sodium carbonate

**Part 2**

* 1,4-dimethoxybenzene
* T-butyl alcohol
* Acetic acid
* Concentrated sulfuric acid
* Dichloromethane

**For Further Investigation**

* m-xylene AKA (1,3-dimethylbenzene)

**Part 3**

* Saturated sodium bicarbonate

**Grignard Synthesis of Triphenylmethanol and Benzoic Acid p. 392-398**

**Part 1**

* Anhydrous calcium chloride
* Magnesium solid
* Dry diethyl ether
* Dry bromobenzene
* Ice
* Absolute ether (Dry, anhydrous, can use 5A molecular sieves)
* Iodine solid
* Sodium bisulfite solution (concentration irrelevant)

**Part 2**

* Methyl benzoate

**Part 3**

* Benzophenone

**Part 4**

* 10% sulfuric acid
* Diethyl ether (not anhydrous)
* Saturated sodium chloride
* Ligroin AKA (hexanes)
* Dichloromethane
* Petroleum ether

**Esterification p. 408-413**

**Table 40.1**

* Concentrated sulfuric acid
* 2-methyl-2-propanol
* Formic acid
* 1-propanol
* Acetic anhydride
* Methanol
* Butyric acid
* Ethanol
* Propionic acid
* Silver acetate
* 1-bromo-3-methylbutane
* Benzyl alcohol
* Ketene
* 2-methyl-2-butanol
* Octanol
* Salicylic acid

**Part 1**

* Benzoic acid
* Ice
* Boiling chips
* Ether
* 0.5M sodium bicarbonate
* Saturated sodium chloride
* Anhydrous calcium chloride
* Sodium bicarbonate solid

**Part 2**

* Solid shortening (Crisco), lard, or hydrogenated olive oil
* Sodium hydroxide solid
* Sand
* Sodium chloride solid

**The Perkin Reaction: Synthesis of α-Phenylcinnamic Acid p. 550-552**

* Phenylacetic acid
* Benzaldehyde
* Triethylamine
* Acetic anhydride
* Boiling chips
* Concentrated hydrochloric acid
* T-butyl methyl ether
* 3M sodium hydroxide
* Acetic acid
* Petroleum ether or pentane

**Carbohydrates and Sweeteners p. 576-579**

**Part 1**

* 1% solution of carbohydrates (As many as you have. Must have at least 1 aldose, ketose, monsaccharide, disaccharide, pentose, hexose, aldohexose and ketohexose. Note that some of these overlap ):
* Mannose
* Galactose
* Glucose (must have this one)
* Fructose (must have this one)
* Arabinose
* Xylose
* Lactose (must have this one)
* Ribose
* Maltose (must have this one)
* Sorbose
* Sucrose
* Starch
* Glycogen
* 1% solution of artificial sweeteners:
* Saccharin
* Aspartame
* Other
* Molisch reagent (see directions for making this on p. 576)
* Concentrated sulfuric acid
* Sodium carbonate solid

**Part 2**

* Red tetrazolium reagent (see directions for making this p. 577)
* 3M sodium hydroxide

**Part 3**

* Barfoed’s reagent (see directions for making this p. 577)

**Part 4**

* Bial’s reagent (see directions for making this p. 578)
* Boiling chips
* Sand
* Cyclohexanol
* **See next page**

**Part 5**

* Seliwanov reagent (see directions for making this p. 578)

**Part 6**

* Phenylhydrazine reagent (see directions for making this p. 578)
* Bleach