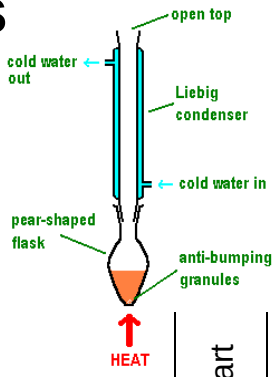
Carbonyl Compounds



The key areas of study in this topic are:

- Reactions of carbonyl compounds
- Tests for carbonyl compounds

By the end of this topic I should be able to:	Start	End
Describe the oxidation of aldehydes using $Cr_2O_7^{2-}/H^+$ (i.e. $K_2Cr_2O_7/H_2SO_4$) to form carboxylic acids		
Describe nucleophilic addition reactions of carbonyl compounds with: • $NaBH_4$ to form alcohols • HCN [i.e. $NaCN(aq)/H^+_{(aq)}$], to form hydroxynitriles		
Describe the mechanism for nucleophilic addition reactions of aldehydes and ketones with $NaBH_4$ and HCN		
Describe the use of 2,4-dinitrophenylhydrazine to: • detect the presence of a carbonyl group in an organic compound • identify a carbonyl compound from the melting point of the derivative		
Describe the use of Tollens' reagent (ammoniacal silver nitrate) to: • detect the presence of an aldehyde group • distinguish between aldehydes and ketones, explained in terms of the oxidation of aldehydes to carboxylic acids with reduction of silver ions to silver.		

In all topic areas you should be able to demonstrate and apply your knowledge and understanding.