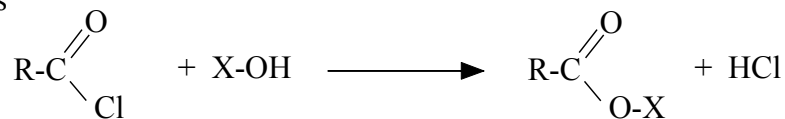


## Chemguide – questions

### ACYL CHLORIDES: REACTIONS WITH WATER, ALCOHOLS AND PHENOLS

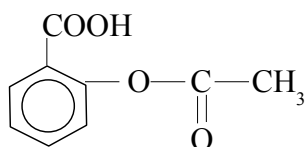
1. The general equation for the reaction between any of these compounds and water, an alcohol or a phenol is



where R is a hydrocarbon group.

- a) What would you observe in every case if you added some water or an alcohol or a phenol to some ethanoyl chloride in a test tube?
- b) Write the structure of the organic product in each case if you carried out the following reactions. Your structures should be drawn in the same way as those you saw on the Chemguide page.
- (i) propanoyl chloride and water
  - (ii) ethanoyl chloride and methanol
  - (iii) ethanoyl chloride and ethanol
  - (iv) propanoyl chloride and propan-2-ol
  - (v) propanoyl chloride and phenol

2. a) Aspirin has the structure



Draw the structures of the two compounds that you would use to make aspirin using the same sort of reactions as above.

- b) This reaction is known as *acylation* or *ethanoylation*. Explain what these two words mean, and what the difference is between them.