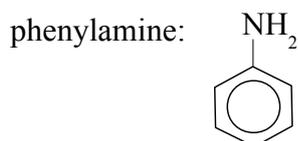


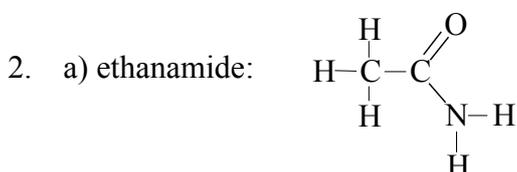
Chemguide – answers

ACYL CHLORIDES: REACTIONS WITH AMMONIA AND PRIMARY AMINES

1. ethylamine: $\text{CH}_3\text{CH}_2\text{NH}_2$



You can think of these as ammonia molecules in which one of the hydrogens has been replaced by a hydrocarbon group.

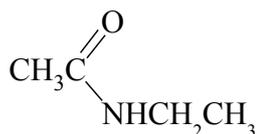


b) Ammonia is basic and HCl is, of course, acidic. Any HCl produced would immediately react with any ammonia present to give ammonium chloride.

c) A vigorous reaction producing thick white smoke (a mixture of ethanamide and ammonium chloride – but you aren't specifically asked for the names, so you don't need them).

3. a) N-ethylethanamide and ethylammonium chloride

N-ethylethanamide:



ethylammonium chloride: $\text{CH}_3\text{CH}_2\text{NH}_3^+ \text{Cl}^-$

(You must show the fact that the ethylammonium chloride is ionic. Because you aren't asked for it, there is no real need to give a fully displayed structural formula in either of these cases.)

