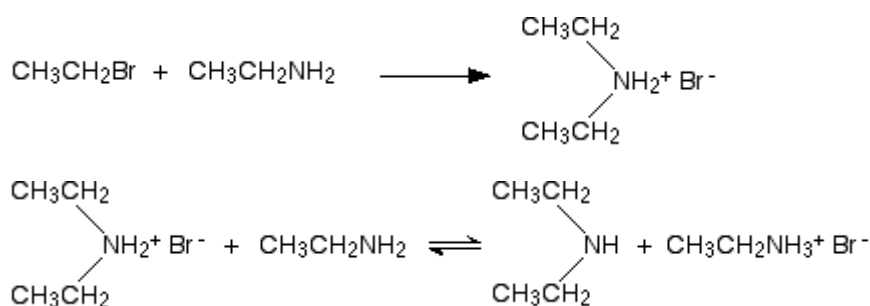


Chemguide – questions

AMINES: AS NUCLEOPHILES

- What is a nucleophile?
 - Why are amines nucleophiles?
- This question is about the reactions between amines and halogenoalkanes (alkyl halides).
 - The reaction between bromoethane and ethylamine produces a complicated mixture of products, but the first to be formed are given by these equations taken from the Chemguide page.



Describe in words what is happening.

These next three questions are deliberately made awkward so that you can only do them by understanding what you have read, and not just learning it. Take your time over them.

- Write the formulae for the corresponding products of the reaction if you started with methylamine rather than ethylamine, but still reacted it with bromoethane.
 - If you started with a secondary amine such as dimethylamine, you would initially get a tertiary amine and its salt in the mixture. Write the formulae of these products if you reacted dimethylamine with bromoethane.
 - Draw the structure of the product that you would get if you reacted the tertiary amine trimethylamine with bromoethane.
- Describe what you would see if you added concentrated ethylamine solution to ethanoyl chloride.
 - Give the names and write the formulae for the products of this reaction.
 - Give the names and write the formulae of the products if you heated methylamine with ethanoic anhydride.