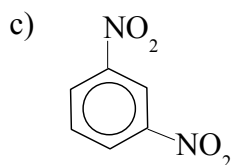


Chemguide – answers

ARENES: NITRATION

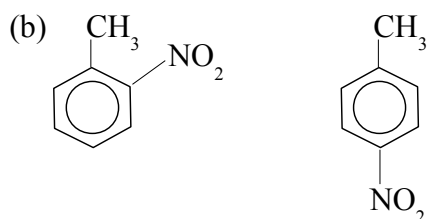
1. a) A mixture of concentrated nitric and concentrated sulphuric acids.
b) To try to prevent more than one nitro group substituting into the ring.



1,3-dinitrobenzene

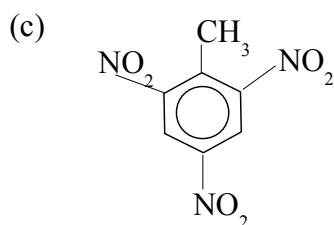
d) NO_2 groups make the ring much less reactive than benzene itself. By the time you get two NO_2 groups attached, the ring is so unreactive that getting a third one attached is very slow.

2. (a) (A partial explanation only) Methyl groups “push” electrons away from themselves towards the ring, increasing the electron density in the ring. That makes it much more attractive to the sort of things which the ring reacts with. (If you have done the mechanism for this reaction, you will know that it involves the attack by a NO_2^+ ion.)



2-nitromethylbenzene and 4-nitromethylbenzene

(If you insist on using the IUPAC recommendations, check your names from the last green box on the Chemguide page!)



2,4,6-trinitromethylbenzene