

SUMMARY

1. Dialkyl sulphones, benzyl phenyl sulphone, bis-(phenylsulphonyl)-methane and tris-(phenylsulphonyl)-methane fail to undergo the Mannich reaction.

2. Arylsulphonylacetic acids undergo the Mannich and the Knoevenagel reactions. Phenylsulphonylacetic acid and p-tolylsulphonylacetic acid condense with aromatic aldehydes and ammonia or aliphatic primary amines furnishing β -amino and α, β -unsaturated sulphones.

3. An aldol-type condensation resulting in the formation of a β -hydroxy sulphone has been found to occur in the reaction of p-tolylsulphonylacetic acid with chloral.

4. α -p-Tolylsulphonylpropionic acid also undergoes the Mannich and the Knoevenagel reactions, but it is less reactive than p-tolylsulphonylacetic acid.

5. In the reaction of ethyl phenylsulphonylacetate with an aromatic aldehyde and ammonia, an α, β -unsaturated sulphone is got; no Mannich base is obtainable.

6. Phenylsulphonylacetone nitrile condenses with aromatic aldehydes in presence of ammonium acetate giving α, β -unsaturated sulphones in excellent yield.

7. The reaction of ω -phenylsulphonylacetophenone with ammonia and some aromatic aldehydes gives α, β -unsaturated sulphones and basic compounds. However, with other aromatic aldehydes only α, β -unsaturated sulphones are obtained.

8. α, α -Bis-(benzoylphenylsulphonylmethyl)-ethane is formed when ω -phenylsulphonylacetophenone condenses with acetaldehyde-ammonia.

9. A mechanism has been suggested for the Mannich and the Knoevenagel reactions.

10. The Friedel-Crafts reaction of the three isomeric acet-toluidides with thionyl chloride has been investigated. No product can be isolated in the case of acet-o-toluidide. Both acet-m- and acet-p-toluidides give sulfoxides. The sulfoxides are oxidised to the corresponding sulphones and then hydrolysed to the amino sulphones. The structures of the amino sulphones are established by deamination and synthesis of the deaminated sulphones.

11. Di-o-tolyl sulphone reported in the literature is shown to be a different compound by synthesising it unequivocally in the present work.