

REACTION OF AZAPHENANTHRENES AND THE N-OXIDES  
WITH METHYLSULFINYL CARBANION

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Methylsulfinyl carbanion (MSCA) has been used to methylation of quinoline, isoquinoline and the N-oxide. However, when benzo[h]quinoline 1-oxide was submitted to the reaction with MSCA in the usual procedure ( NaH, 70°, 4 hr ), an unusual reaction took place to produce phenanthrene in an excellent yield. Accordingly, in order to carry out further investigation of the reaction, azaphenanthrene was reacted with MSCA, as follows:

- 1) Reaction of benzo[h]quinoline and the N-oxide with MSCA.
- 2) Reaction of benzo[f]quinoline and the N-oxide with MSCA.
- 3) Reaction of 4,6-phenanthroline and the N-oxide with MSCA.
- 4) Studies of the reaction mechanism of N-oxide elimination and applications of the reaction to quinolines, isoquinolines and o-phenanthrolines.
  - a) Reaction condition of benzo[h]quinoline 1-oxide with MSCA and the substituent effect were examined, and then, this reaction mechanism was confirmed by use of deuteriodimethylsulfoxide.
  - b) When the N-oxide elimination was applied to quinoline-, isoquinoline- and o-phenanthroline N-oxide, each N-oxide was eliminated, and afforded naphthalene and benzo[h]quinoline.