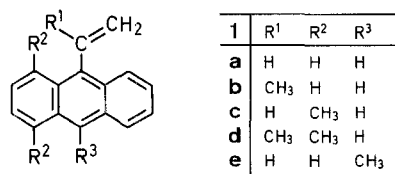


A New Synthesis of 9-Vinyl- and 9-Isopropenylantracene Derivatives

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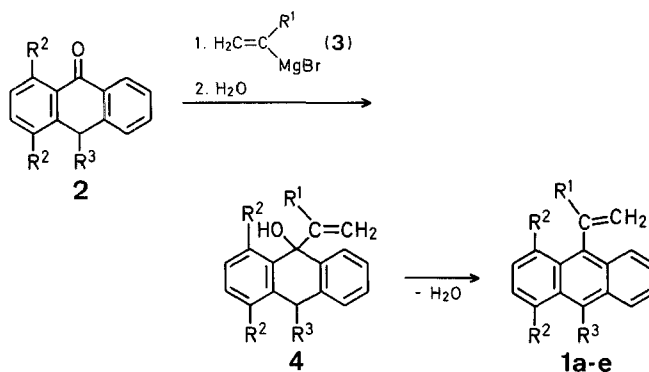
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Recently the polymerization of 9-vinyl- and 9-isopropenylantracenes has attracted attention¹⁻⁸. However, the synthesis of the starting monomers presents some difficulties. New syntheses of the 9-alkenylantracenes **1a-e** are now described.



Compound **1a** was previously prepared by (a) Wittig reaction of 9-formylantracene^{6,14}, a rapid method which gives good yields or (b) by reaction of 9-formylantracene with methylmagnesium iodide and hydrolysis to give 9-(1-hydroxyethyl)-anthracene and subsequent dehydration of the latter with potassium hydrogen sulfate⁹ to give **1a** in poor yield. Compound **1b** cannot be prepared from 9-acetylanthracene by these methods^{6,9}. We have previously described the synthesis of **1b** from 9-bromoanthracene by a tedious process¹⁰.

The present method involves the reaction of a vinyl Grignard reagent **3** with anthrone, 9-methylanthrone, or 1,4-dimethylanthrone (**2**; R² = H or CH₃, R³ = H or CH₃) in analogy to the preparation of 9-alkyl- (but not -vinyl- or -isopropenyl)-anthracenes from anthrone^{11,12,13}.



Two experimental procedures are employed:

Method A: Vinylmagnesium bromide (**3**; R¹ = H) is reacted with anthrone (**2**; R², R³ = H) and the resultant alcohol **4a** (80% yield) is dehydrated to give **1a** in quantitative yield. Alcohol **4e** is ob-

- ⁴ J. P. Laguerre, E. Marechal, *Ann. Chim.* **9**, 163 (1974).
- ⁵ A. Rembaum, A. Eisenberg, *Macromol. Rev.* **1**, 57 (1967).
- ⁶ J. F. Yanus, M. Stolka, J. M. Pearson, *Macromolecules* **9**, 715 (1976).
- ⁷ S. Dumitrescu, M. Grigoras, C. Simionescu, *Plaste Kautsch.* **26**, 131 (1979); *C. A.* **91**, 5502 (1979).
- ⁸ J. Coudane, M. Brigodiot, E. Marechal, *J. Macromol. Sci. Chem.* **13**, 827 (1978).
- ⁹ E. G. E. Hawkins, *J. Chem. Soc.* **1957**, 3858.
- ¹⁰ J. Coudane, E. Marechal, *C. R. Acad. Sci. Ser. C* **286**, 169 (1978).
- ¹¹ R. Lalande, R. Calas, *Bull. Soc. Chim. Fr.* **1959**, 766.
- ¹² F. Krollpfeiffer, F. Branscheid, *Ber. Dtsch. Chem. Ges.* **56**, 1617 (1923).
- ¹³ R. C. Parish, L. M. Stock, *J. Org. Chem.* **31**, 4265 (1966).
- ¹⁴ G. Wittig, U. Schöllkopf, *Chem. Ber.* **87**, 1318 (1954).