

1,8-Dimethylantracene

Shuzo AKIYAMA and Masazumi NAKAGAWA

Department of Chemistry, Faculty of Science, Osaka University, Toyonaka, Osaka

(Received May 28, 1971)

It has been reported by Lavaux¹⁾ that the Friedel-Crafts reaction of toluene with dichloromethane in the presence of aluminum chloride afforded three compounds with mp 240, 244.5, and 86°C. The last compound has been tentatively assigned to 1,8-dimethylantracene by Clar.²⁾

During the course of synthetic studies of various anthracene derivatives,^{3,4)} we have prepared 1,8-dimethylantracene by the reduction of 1,8-bis(bromomethyl)anthracene⁴⁾ by means of lithium aluminum hydride in tetrahydrofuran. The resulting hydrocarbon showed mp 128–129°C, and gave satisfactory elemental analysis, infrared, ultraviolet (Fig. 1) and mass spectra. In view of the method of preparation, the hydrocarbon thus obtained should be unequivocally 1,8-dimethylantracene. Consequently, the hydrocarbon of mp 86°C prepared by Lavaux evidently concerns another dimethylantracene.

Experimental

1,8-Dimethylantracene. A mixture of 1,8-bis(bromomethyl)anthracene⁴⁾ (0.728 g, 2 mmol), an excess of lithium aluminum hydride (0.076 g) and tetrahydrofuran (40 ml) was stirred at room temperature for 1 hr and then refluxed for 2 hr. The reaction mixture was decomposed by addition of cracked ice and 6N hydrochloric acid (10 ml). The organic layer was worked up according to the usual procedure. Re-

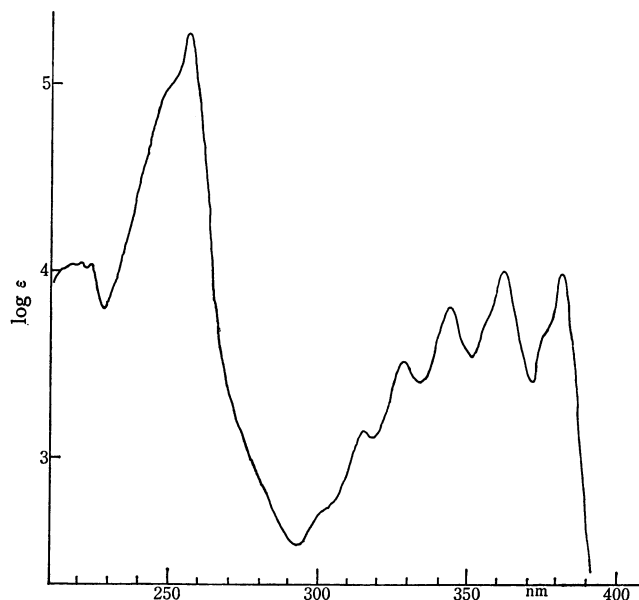


Fig. 1. The electronic spectrum of 1,8-dimethylantracene.

moval of the solvent *in vacuo* resulted in a crude material which was re-dissolved in benzene (10 ml). The benzene solution was passed through a thin layer of alumina (4 g). Evaporation of the solvent under reduced pressure afforded faint yellow crystals (0.321 g, 78%). Recrystallization twice from ethanol gave colorless plates with blue fluorescence, mp 128–129°C. Found: C, 93.02; H, 6.81%. Calcd for C₁₆H₁₄: C, 93.16; H, 6.84%. Mass: 206 (M⁺), 191 (M⁺ - CH₃). Mol. Wt. 206. UV: $\lambda_{\text{max}}^{\text{n-hexane}}$ (ϵ) 220.5 (1100), 223.5 (1100), 256 (18200), 314 (1300), 328.5 (3300), 344.5 (6600), 362 (10300), and 381 nm (9800). IR: 2850–3100, 1520, 1620, 1440, 1380, 900, 876, 780, 740 cm⁻¹.

1) J. Lavaux, *Compt. Rend.*, **139**, 976 (1904).

2) E. Clar, "Aromatic Hydrocarbons," Vol. 1, Academic Press, London and New York, Springer Verlag, Berlin, Göttingen and Heidelberg (1964), p. 299.

3) S. Akiyama and M. Nakagawa, *This Bulletin*, **33**, 1293 (1960); **35**, 1826 (1962).

4) S. Akiyama and M. Nakagawa, *ibid.*, **44**, 3158 (1971).