NOTE

Crystal and molecular structure of a photo dimer of 1,2-dihydro-3-phenynaphthalene, C$_{32}$H$_{28}$

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Introduction

Previously the photochemical inertness of 1,2-dihydro-3-phenynaphthalene (1) in apolar solvents at room temperature has been reported (Lamberts and Laarhoven, 1984). The related compound 1,2-dihydro-3-methylnaphthalene (2) showed a large temperature-dependent photochemical behavior (Laarhoven and Berendsen, 1986). This prompted us to investigate the photochemistry of 1 at different temperatures.

Irradiation of 1, dissolved in hexane, between -20 and -80°C did not result in a rearrangement, as observed with 2, but in the formation of a mixture of four dimers. One of these dimers could be isolated in a crystalline form. As it was not possible to elucidate its structure from the NMR spectrum, it was decided to perform an X-ray analysis. The compound is denoted DEHAN for further reference. See Scheme 1.
Fig. 1. Stereoview of the molecule.

Fig. 2. Crystallographic numbering scheme.

Scheme 1.