Taking the Dimers Out of Diazaheptacenes

Significance: The authors have successfully designed, synthesized, and isolated the first persistent azaheptacene. The diazaheptacene in this work required four Si(š-Bu)3-ethyl groups to effectively prevent dimerization upon oxidizing to the final product 4.

Comment: The key synthetic step was the fast oxidation using manganese oxide to convert 3 into 4, which was carried out for no longer than forty seconds. The product 4 was stable for approximately one hour, after which dimerization products were detected. Alternative trialkylsilyl-ethyl groups, such as the TIPS-ethyl group, proved ineffective at impeding dimerization.

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