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PMR study of the three-dimensional structure of stereoisomeric adducts of cis-alloocimene with acrylonitrile and their cyclization products with dichlorocarbene

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Abstract

1. cis-Alloocimene adds acrylonitrile to give two stereoisomeric adducts, which exist in a half-chair conformation. Based on PMR spectra, one of the stereoisomers has a quasiaxial methyl group and pseudoequatorial nitrile and isopropylidene groups, while the other stereoisomer has a quasi-axial isopropylidene substituent and equatorial nitrile and methyl groups. 2. Dichlorocyclopropanation of these adducts occurs from the sterically less hindered side of the molecules, with the formation, from one of the stereoisomers, of a cycloaddition product at the exocyclic double bond, and two stereoisomeric cycloaddition products at the two double bonds with a cis orientation of the cyclopropane ring and the CN group; the other stereoisomer, on the other hand, gives two stereoisomeric cycloaddition products at the two double bonds with a trans orientation of the cyclopropane ring and CN-group. © 1988 Plenum Publishing Corporation.

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