REACTION OF ORGANOMAGNESIUM COMPOUNDS WITH BICYCLIC ALKYL HALIDES

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The great difficulty in the replacement of halogen present at the bridgeheads of bicyclic structures of the type of 1-apocamphane is well known [1-4]. The rate of solvolysis of such systems is extremely low and they do not react with K, Mg, Zn, and Cu [5-6].

We have found that apocamphyl bromide and chloride react with a solution, filtered free from excess of magnesium, of 2-butylmagnesium chloride in THF at 60°C with the formation (after hydrolysis) of apocamphane with yields of 14.8 and 1.2%, respectively, after 10 h. 2-Hexylmagnesium chloride and phenylmagnesium bromide react with apocamphyl chloride in a similar manner to 2-butylmagnesium chloride (yields after 10 h, 3.08 and 0.5%, respectively).

The result obtained can be explained by the assumption of transmetallation between the organomagnesium compound and the apocamphyl halide.

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