

β -三氯锗基丙酸及 β -三苯锗基丙酸与苯基溴化镁的反应

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摘要 三氯锗基丙酸(1a)和三苯锗基丙酸(2a)与过量苯基溴化镁起反应时,这两个分子中的羧基表现出一些奇特性质。当1a和2a与不同浓度的苯基溴化镁起反应时,都能生成相应的酮(3a)和醇(4a)。在稀盐酸作用下,4a极易脱水生成1,1-二苯基-3-三苯锗基丙烯-1(5a)。当1a与苯基溴化镁起反应,然后再用稀盐酸处理也同样得到5a。5a的Ge-C键能被LiAlH₄高选择性地切断,生成三苯基锗烷(6a)和1,1-二苯基丙烯(6b)。

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The reactivities of phenylmagnesium bromide with 3-(trichloro-germyl)-propanoic acid and 3-(triphenylgermyl) propanoic acid

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Abstract 3-(Trichlorogermlyl) propanoic acid (1a) was synthesized from germanium dioxide and (1a) reacted with phenylmagnesium bromide in molar ratio 1:4 led to 3-(triphenylgermyl) propanoic acid (2a). In the compounds 1a and 2a the carboxylic functional group shows some unusual properties when it reacted with excess of phenylmagnesium bromide. 1a reacted with phenylmagnesium bromide in molar ratio 1:5 led to phenyl-2-(triphenylgermyl) ethyl ketone (3a) and in molar ratio 1:6 led to 1, 1-diphenyl-3-(triphenylgermyl) propanol-1 (4a). The compounds 2a reacted with phenylmagnesium bromide in molar ratio 1:2 led to 3a and in molar ratio 1:3 led to 4a also. Dehydration of the compound 4a with dilute hydrochloric acid seemed especially easy, which given 1, 1-diphenyl-3-(triphenylgermyl)-1-propene (5a) in high yield. Moreover, 1a could react with phenylmagnesium bromide in molar ratio 1:6 and then treated directly with dilute hydrochloric acid led to 1, 1-diphenyl-3-(triphenylgermyl)-1-propene 5a in one pot reaction. Alkyl Ge-C bond in the compound (5a) can be cleaved selectively by lithium aluminium hydride (LiAlH₄) in good yield, which given products of triphenylgermane (6a) and 1, 1-diphenylpropene-1(6b).

Key words [METHYLACETIC ACID P](#) [ORGANO GERMANIUM](#) [ORGANO CHLORIDE COMPOUNDS](#) [TRIPHENYL GROUP](#) [BENZENEPROPANOIC ACID P](#) [ORGANO GERMANIUM](#) [BROMIDE](#) [MAGNESIUM COMPOUNDS](#) [PROPENE P](#) [ORGANO GERMANIUM](#) [ACETOPHENONE P](#) [ORGANO GERMANIUM](#) [GERMANE](#) [TRIPHENYL GROUP](#)

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