

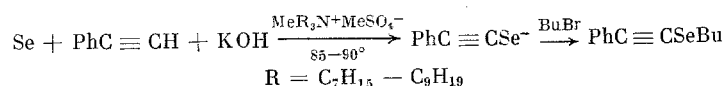
METHOD FOR THE GENERATION OF THE PHENYLETHYNESELENOLATE ANION FROM METALLIC
SELENIUM AND PHENYLACETYLENE UNDER PHASE TRANSFER CATALYSIS CONDITIONS

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A method has been reported for the preparation of alkyl(phenylethynyl)selenides, whose formation proceeds through the phenylethyneselenolate anion generated from selenium and phenylacetylene in the KOH/HMPTA superbases system [1].

We have developed a method for the generation of the phenylethyneselenolate anion in a three-phase system containing metallic selenium, aqueous KOH, and a solution of phenylacetylene in toluene in the presence of a phase transfer catalyst. The yield of the phenylethyneselenolate anion was determined relative to the product of its alkylation by butyl bromide and is 50% relative to the selenium taken.



Under analogous conditions, the yield of butyl(phenylethynyl)selenide in the absence of the phase transfer catalyst is only 1%. Despite the formation of selenide anions in aqueous alkali from metallic selenium [2], the products of the addition of these anions to phenylacetylene were not detected under the reaction conditions.

Butyl(phenylethynyl)selenide, bp 156°C (1 mm), n_D^{20} 1.6013. IR spectrum (ν , cm^{-1}): 2145 ($\text{C} \equiv \text{C}$). PMR spectrum (δ , ppm, in CDCl_3): 7.22 m (C_6H_5), 2.80 t (SeCH_2), 1.77 m (SeCH_2CH_2), 1.44 m (CH_2CH_3), 0.95 t (CH_3). Mass spectrum (m/z): M^+ 238. Found: C 60.50; H 5.98; Se 34.17%. Calculated for $\text{C}_{12}\text{H}_{14}\text{Se}$: C 60.79; H 5.90; Se 33.30%.

LITERATURE CITED

1. V. A. Potapov, N. K. Gusarova, S. V. Amosova, et al., Sulfur Lett., 4, 13 (1985).
2. V. A. Potapov, N. K. Gusarova, S. V. Amosova, et al., Zh. Org. Khim., 22, 276 (1986).

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