GAS-PHASE REACTION OF ALCOHOLS WITH 2-ETHOXYTETRAHYDROPYRAN

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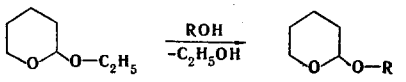
UDC 547.811.812:543.544

Substituent exchange occurs when a mixture of 2-ethoxytetrahydropyran (I) with an alcohol is passed through aluminum oxide at 200-240°C (this is similar to the exchange observed in the liquid phase [1]).



I IIa-d

Secondary and tertiary alcohols are less active than primary alcohols in this reaction. Data obtained at 210° and a reagent molar ratio of 1:1 under pulse conditions are presented in Table 1.

TABLE 1. Yields of 2-Alkoxytetrahydropyrans

Alcohol	Compound	Yield, %
n-C_3H_7OH	IIa	78,5
iso-C_3H_7OH	IIb	44,1
n-C_4H_9OH	IIc	78,2
tert-C_4H_9OH	IId	20,4

The products were identified by gas—liquid chromatography with respect to authentic samples with an LKhM-8MD chromatograph with a thermal-conductivity detector at an analysis temperature of 100-110°; the column was 4 m long with a diameter of 3 mm, the stationary phase was FS, the carrier gas was hydrogen, and the flow rate was 4 liters/h.

LITERATURE CITED

1. V. B. Mochalin, A. N. Kornilov, A. N. Vul'fson, and I. S. Varpakhovskaya, Khim. Geterotsikil. Soedin., No. 2, 167 (1975).

Ufim Petroleum Institute, N. D. Zelinskii Institute of General Chemistry, Academy of Sciences of the USSR. Translated from Khimiya Geterotsiklicheskikh Soedinenii, No. 5, p. 714, May, 1976. Original article submitted November 18, 1975.