

Thematic course: Alkylation of phenols by  $\beta$ -pinene using phenolate and aluminum isopropylate.  
Part 4.

## Alkylation of resorcinol by $\beta$ -pinene at the presence of aluminum-containing catalysts

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**Keywords:** phenol, resorcinol,  $\beta$ -pinene, aluminum phenoxide, aluminum isopropoxide,  
terpenphenols.

### Abstract

Studied alkylation of resorcinol by  $\beta$ -pinene in the presence of  $(\text{PhO})_3\text{Al}$  and  $(i\text{-PrO})_3\text{Al}$  at 120 and 160 °C. It was found that on the alkylation resorcinol of  $\beta$ -pinene affect the structure carbocation formed from  $\beta$ -pinene. The use of equimolar amounts of the starting components (or excess resorcinol) contribute to the formation of esters of the chroman type. Use of excess  $\beta$ -pinene leads to the formation of product *O*- and *C*-alkylation with bornyl structure of substituent.