that paper no data were given on the alkylation of n-butane with propylene, but it was pointed out that the alkylation os isobutane with propylene was conducted at a higher pressure (300 atm). The authors themselves consider as a disadvantage of this method, the presence in the alkylate of 1 to 2% chlorine, the complete removal of which complicates the process with additional difficult operations.

The data presented show that it is necessary to develop heterogeneous catalytic methods for the complex chemical processing of gaseous and low-boiling hydrocarbons. With the aid of such catalysts not only branched, but also normal hydrocarbons could be treated. In our work this question was studied for the case in which n-butane is alkylated with propylene in the presence of aluminum oxide. Experiments led to a circulating type of apparatus, a diagram of which is given in Fig. 1.

Fig. 1. Diagram of the alkylation apparatus.

From cylinder 1, using gas compressor 2, into mixer 3, which consists of an autoclave equipped with a mechanical stirrer and inspection port, n-butane and propylene are added in sequence after first being dried over calcium chloride. The liquid mixture of n-butane and propylene, by means of hydraulic compressor 4 (of the system of Vereshchagin and Ivanov) is fed to reactor 5 which has been heated to the required temp. The reactor is fabricated from stainless steel and is 450 mm long, has a 20 mm inside diam and a 17.5 mm wall