

Oral E3

Biofuel Synthesis from Vegetable Oils in Supercritical Methanol and Ethers in Flow Type Reactor

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Transesterification reactions of sunflower, rapeseed, corn and cameline oils in supercritical (sc) methanol were studied in a flow reactor under equal conditions. It was found that the oil type produced insignificant effect on the product composition (fatty acid esters) and oil conversion value. The reaction conditions provided the selectivity and high conversion of the oils were selected.

Transesterification of vegetable oils (sunflower, corn oil) in supercritical esters (ethyl acetate, diethyl ether) in the flow type reactor was performed. The peculiarities of this reaction in comparison with the transesterification of oils in sc - methanol were studied. It is shown, first, that the ethyl acetate at temperatures above 2500°C begins to decompose into acetic acid and gaseous products. Secondly, large amount of free fatty acids, as well as products of not complete transesterification of triglycerides is found in the reaction products.

The main difference the reaction with ethyl acetate from similar transformations in sc-methanol is the presence of free fatty acids and products of not complete transesterification of triglycerides (mono - and di - acetate glycerides) in the reaction products.