



ENVIRONMENTALLY BENIGN “GREEN” IONIC LIQUID TYPE EXTRACTANTS

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Recently the processes, which have obtained the general name «green chemistry» became one of priority directions in chemistry. Ionic liquids (IL) also draw attention as ecologically safe solvents, extractants since they are easily separated and purified from reaction products and can be repeatedly used. IL as the most perspective solvents from the minimal influence on an environment point of view, find widely application in synthetic, catalytic, electrochemical, etc. processes. Now they are used in more than 300 reactions of organic and petrochemical synthesis.

In the present work the results on development of new ionic liquid extractants (ILE) - salts on the base of mono-, di-, triethanolamines and various acids are presented. ILEs are the viscous-flow liquids at room temperature, which are characterized by electroconductivity $5,5 \times 10^{-4} \lambda$ Siemens.

ILEs have been tested for separating the hydrocarbon-alcohol-ether-oligomer mixtures (HAEOM) obtained as a result of bioethanol interaction with C₄-fraction of catalytic cracking or pyrolysis. ILEs were mixed in various ratios with HAEOM (0,5÷2 – 1) at room temperature. After vigorous mixing during 30 minutes the mixtures were allowed to layer for an hour. The raffinate was separated and analyzed using gas-liquid chromatograph XD of Perkin-Elmer US production. Before extraction with ILE HAEOM composition constitutes – hydrocarbon-7%, alcohol-20%, ether-68,6%, oligomer-4,4%. After extraction with ILE the raffinate contains- hydrocarbon- 3,6 %, alcohol- 4 %, ether- 90 %, oligomer- 2,4%.

After pouring off raffinate the waste ILE is recovered by distillation (up to 90 °C at atmospheric pressure) and can be used again. The process in which ILE is used allows avoiding a formation of large amount of sewage water.