

Abstract

Disclosed is an alkylation process using ionic liquid as catalyst, which process comprises separating halogenated hydrocarbons-rich fraction from the alkylation product by distillation and/or adsorption and reintroducing the separated fraction into the reaction system during the alkylation reaction, wherein the ionic liquid catalyst used in the alkylation reaction has a cation derived from hydrohalide of alkyl amine, hydrohalide of imidazole or hydrohalide of pyridine and an anion derived from one or more metallic compounds. The inventive process effectively utilizes the halogenated hydrocarbons in the alkylation product, prolongs the life of the ionic liquid catalyst, and reduces the halogen content in the alkylate oil.