

## Direct synthesis of morpholinium and piperidinium ionic liquids

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Over the past decade, ionic liquids are competitively valuable solvent and being more highlighted in several industries because of their unique properties. Therefore a general method to synthesize ionic liquids was developed. The general method for synthesizing ionic liquids need to eliminate metal halides and also has a difficulty to purify them. Residual metal halides cause changes to IL properties. We performed direct method to synthesize halide-free ionic liquids using a single alkylating reagent as the alkyl donor yielding ionic liquids. This synthetic method gives high yields of products. Due to needless other procedure, the cost of product could become much lower. Direct alkylation of morpholine and piperidine derivatives was successfully performed. Results of diverse ionic liquids synthesis were analyzed by NMR, and were synthesized with high purity.