

**EVALUATION OF IONIC LIQUIDS FOR
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Organosulfur compounds act as catalyst poisons for many industrial and automotive catalysts. Moreover, together with their combustion products, they are hazardous pollutants. Current environmental standards limit the sulfur content in fuels to ultra-low levels. Extractive desulfurization with polar solvents is a promising method for thorough and selective removal of organosulfur compounds, including thiophene and its derivatives, from fuels. Ionic liquids (ILs) are often considered as potential thiophene extractants. The efficiency of the extractive process is assessed based on the parameters of solvent selectivity and capacity, which can be determined from the activity coefficients at infinite dilution of the substances being separated.

We have compiled a database of experimental values of the activity coefficients of thiophenes and hydrocarbons in ILs taken from literature. We have analyzed the influence of the structure of the IL cation and anion on these values. Based on these data, we have constructed predictive models for limiting activity coefficients, separation selectivities and capacities in various ILs. Furthermore, we have tested the models against our own experimental data for certain protic ILs that have been underrepresented in the training set.

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