

Optimization of Dissolution of Chevreul's Salt in Ammonium Chloride Solutions

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Abstract : In this study, Chevreul's salt was dissolved in ammonium chloride solutions. All experiments were performed in a batch reactor. The obtained results were optimized. Parameters used in the experiments were the reaction temperature, the ammonium chloride concentration, the reaction time and the solid-to-liquid ratio. The optimum conditions were determined by 2⁴ factorial experimental design method. The best values of four parameters were determined as based on the experiment results. After the evaluation of experiment results, all parameters were found as effective in experiment conditions selected. The optimum conditions on the maximum Chevreul's salt dissolution were the ammonium chloride concentration 4.5 M, the reaction time 13.2 min., the reaction temperature 25 °C, and the solid-to-liquid ratio 9/80 g.mL⁻¹. The best dissolution yield in these conditions was 96.20%.

Keywords : Chevreul's salt, factorial experimental design method, ammonium chloride, dissolution, optimization

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