

Solubility of carboxylic acids in various solvents

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The design of the crystallization process requires reliable solubility data. Such experimental datasets are sometimes reported in the literature, but the reliability is questionable and only limited to very well known systems. During the investigation using succinic acid and adipic acid, we found that data sets for some systems are not consistent with each other and some deviate significantly. It is not easy to identify which is the more accurate representation of the solubility. In this study, we double-checked the data using two different methods. The conventional gravimetric method was used together with HPLC analysis. Also, measured unreported solubility of mixtures composed of carboxylic acid + solvents. The data sets are correlated with the Apelbat and NRTL equations. The results can be used for the design of cooling and drowning-out crystallization processes.