

## Removal of naphthenic acid from crude oil using liquid-liquid extraction

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Since the oil price remains high, upgrading of low-quality oil so called opportunity crude is paid attention industries. Naphthenic acid should be removed from acid crude oil because of its acidity which causes the corrosion problem and pipe plugging. Previous researches have been studied on base neutralization for removing the naphthenic acid. However, these methods cause impurities and harsh reaction condition is required for obtaining high reducing performance. In this study, liquid-liquid extraction was used to overcome these problems. It also does not make water emulsion which should be removed before distillation process. For the extraction of naphthenic acid, diol solvents are selected from molecular simulation as candidate solvent. Extraction performance of diol solvent were measured using crude oil and pseudo crude oil composed of oil and naphthenic acid. Naphthenic acid in crude oil was moved to diol solvent at temperature of 333.15K and 343.15K. The acid removed oils were treated by centrifuge for 2000 rpm during 10minute. The extraction performance of each diol solvents are analyzed by ASTM D664 titration method.