

Measurement of Extraction Performance for Removal of Naphthenic Acid from Pseudo Crude Oil

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Upgrading of low-quality crude is paid attention from industries because of high oil price. Especially, the removal of naphthenic acid from crude oil is needed to upgrade the oil quality. Most literatures have studied on approaches of base neutralization to remove the naphthenic acid. However, naphthenic salts formed by those methods may cause such problems as pipe plugging and formation of water emulsion. Liquid-liquid extraction can be useful for removal of naphthenic acid from the crude oil, which overcomes those salt formation problems and also provides economic advantage by solvent recycle. In this work, extraction performance of several candidate solvents were measured using pseudo crude oil mixture composed of diesel oil and naphthenic acid. Naphthenic acid was extracted from pseudo crude oil mixture by a candidate solvent for 2 hours at temperatures of 333.15 K and 343.15 K and atmosphere pressure and the extraction performance of solvents was analyzed for acidity by titration.