

Binary and Ternary Liquid-Liquid Equilibrium of Systems Containing Extractive Solvent for Molybdenum

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Molybdenum (Mo) is further processed into a number of chemical products, and into pure molybdenum metal. For the extraction of Mo, the selected Mo solvent (TBP) should have a low solubility in water because a high water solubility decreases its extractive potential. There are, however, no quantitative details on effect of TBP concentration and sulfuric acid molarity on distribution factors given in the literature.

Therefore, liquid-liquid equilibrium was studied with the binary and ternary systems containing TBP and modifiers in sulfuric acid. The measured LLE data were correlated with gE models. Furthermore, the excess molar volumes (VE) and molar refractivity deviations (ΔR) data at 298.15K were determined and correlated with the Redlich-Kister equation. These properties can conveniently be utilized for practical extraction conditions.