

Pengolahan limbah uranium dengan cara ekstraksi memakai metode membran emulsi

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Abstrak

Uranium Waste Treatment by Extraction Using Emulsion Membrane Method. Research on the treatment of uranium (U) from simulation spent fuel had been done. The treatment was done by extraction using emulsion membrane method. Tributyl phosphate (TBP) as the solvent was diluted by kerosene and surfactant span-80 as an emulgator to bend membrane emulsion. Sodium carbonate solution as internal phase at the pH of 10-11. The mixture solution of uranium (U) and ruthenium (Ru) in HNO₃ was used as a feed and butanol was used as a membrane splitter. The emulsion membrane used in this extraction has a composition as follows : 5% volume surfactant, 10% volume TBP, 35% volume kerosene, and 50% volume Na₂CO₃ solution. From the of acidity, agitation speed and extractions time, yielded the feed's acidity of 2M, agitation speed of 800 rpm and extraction's time of 5 minutes of which resulted an optimum condition with the efficiency of U of 28,15% and separation factor U-RU was large enough to represent the optimum condition of taking uranium element.