

IMOBILISASI ZEOLIT BEKAS PENYERAP LIMBAH RAFINAT DARI PRODUKSI RADIOISOTOP MOLIBDENUM-99 DENGAN POLIMER

Rayyen Firda * Badrus Zaman * Ganjar Samudro

ABSTRACT

Rafinat waste that produced by Instalation of Radioisotop Production is contained uranium. The research of uranium sorption by zeolite Alumino Silico Phosphate (ASP) and selected of best waste loading for immobilisation of saturated zeolite uranium used resin epoxy has been done. Uranium used is a simulation waste from uranyl nitrat hexahydrat which has 50 ppm in concentration. Zeolite ASP was made by mixing pure zeolite with Ammonium Dihydrogen Phosphate (ADHP). This research was done to variate the factor that influence the sorption process. Which are composition of zeolite ASP,retention time, and pH. The result of selected variable will be used for making saturated zeolite uranium will be immobilized with epoxy resin with variation of waste loading.

Optimum condition of uranium sorption reached on zeolite ASP 1:1 with pH 7 and retention time for 12 minutes with uranium removal efficiency 51,1 %. Base on density, compressive strenght, and leaching rate ,the best result for polymer-waste block is on 20 % waste loading. In that condition the density for polymer waste block is 1,0538 gram/cm³, the compresive strenght 19,36 kN/cm³ and the leaching rate is not detected.

Key word: Sorption, zeolite ASP, waste loading, epoxy resin