

พิมพ์ต้นฉบับบทความวิทยานิพนธ์ภายในกรอบสี่เหลี่ยมนี้เพียงแผ่นเดียว

C618611 : MAJOR NUCLEAR TECHNOLOGY

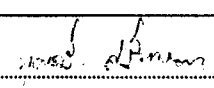
KEY WORD: WASTE CONDITIONING / WASTE IMMOBILIZATION / WASTE SOLIDIFICATION / LOW LEVEL WASTE MANAGEMENT / LOW DENSITY POLYETHYLENE

BOONCHAWEE SRIMOK : USE OF LOW DENSITY POLYETHYLENE AS A SOLIDIFYING AGENT FOR LOW LEVEL RADIOACTIVE WASTE IMMOBILIZATION. THESIS ADVISOR : Dr.SUPITCHA CHANYOTHA, Ph.D. THESIS COADVISOR : ASSIST PROF.CHAYAKRIT SIRI-UPATHAMP, 86 pp. ISBN 974-633-903-7

This study used the low density polyethylene with melt index of 0.50 gram per minute to solidify five simulated low level waste; activated sludge, incinerator ash, spent resin, sodium sulphate and boric acid. Each type of the polyethylene waste forms contains 10, 30 and 50 wt% simulated waste. Tests of compressive strength, tensile strength, chemical resistant and leachability of the produced waste forms were performed. The results were also compared to the standard value recommended by United State Nuclear Regulatory Commission (USNRC) to ensure the use of low density polyethylene as solidifying agent even in the case of problem waste as spent resin.

It was found that conditioned waste forms of activated sludge, incinerator ash , spent resin, sodium sulphate and boric acid gave compressive yield strength of 1372, 1470, 1074, 1235 and 1025 psi respectively. And also gave respective ultimate tensile strength of 1391, 1699, 1338, 1461 and 1405 psi for each above sequence waste. The results of leachability index of Cs-137 and Co-60 were 8.9, 8.0 7.4, 10.8 8.2, 8.7 8.0, 8.5 and 7.8, 9.2 respectively. These conditioned waste forms also provided good chemical resistance properties. The results also indicate that more spent resin waste contents can be solidified in polyethylene than in hydraulic cement.

ภาควิชา.....นิวเคลียร์เทคโนโลยี.....

ลายมือชื่อนิสิต.....

สาขาวิชา.....นิวเคลียร์เทคโนโลยี.....

ลายมือชื่ออาจารย์ที่ปรึกษา.....

ปีการศึกษา.....2539.....

ลายมือชื่ออาจารย์ที่ปรึกษาร่วม.....