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热解燃烧废TBP/OK料液配制

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摘要 采用热解燃烧法处理放射性废磷酸三丁脂/煤油(TBP/OK)溶剂时,为避免热解产生的磷酸腐蚀以及使其充分热解,需在TBP/OK溶剂中加入固磷剂和表面活性剂,并配成均匀、稳定料液。本工作研究配制TBP/OK乳状液和TBP主要降解产物磷酸二丁脂(DBP)对乳状液配制的影响。利用放射性废TBP/OK溶剂进行了热解燃烧废TBP/OK料液配制的配方验证,并推荐了一种能够满足工业规模处理放射性废TBP/OK的料液配方。

关键词 [热解燃烧](#) [废TBP/OK](#) [乳状液](#)

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Compound of Feed for Pyrolysis and Combustion Spent TBP/Kerosene

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Abstract Pyrolysis and combustion technology is an available method to treat spent organic solvent— intermediate-level radioactive TBP/kerosene. In the process TBP is decomposed into C_4H_8 and P_2O_5 that would corrode equipment and pipes. In order to convert P_2O_5 into calcium phosphate or pyrophosphate, and then separate them from the pyrolysis reactor, calcium hydroxide and emulsifier solutions are added to the TBP/kerosene to form stable emulsion after intense mixing. The influences of the different parameters, such as emulsifier kind, emulsifier content, DBP content and temperature, etc., in the pure TBP/kerosene-DBP system on the emulsion is studied. The results show that the mixing do not emulsify if the content of DBP is more than 0.4%. The demonstration with the spent TBP/kerosene show that the emulsion is well-distributed. The emulsion is stable in 24 h and can be transported by pump.

Key words [pyrolysis and combustion](#) [spent TBP/kerosene](#) [emulsion](#)

DOI

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