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化学

水泥固化体中Cs^+浸出行为研究

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摘要 研究了25、40、70、90 ℃下碱矿渣 黏土复合胶凝材料(AASCM)和普通硅酸盐水泥(OPC)固化体中Cs^+的浸出行为，并对浸出机理进行了探讨。结果表明：在25、40、70、90 ℃下，AASCM固化体和OPC固化体浸出行为不同，OPC固化体中Cs^+的累积浸出分数在4个温度下趋于同一数值，而AASCM固化体中Cs^+的累积浸出分数则随温度升高而增大。AASCM固化体中Cs^+的存在状态为溶解态、吸附态及固溶态并存，而OPC固化体中则主要为溶解态和固溶态。AASCM固化体中处于吸附态和固溶态的Cs^+接近90%，处于溶解态的约为10%；而OPC固化体中处于固溶态的约为40%，处于溶解态的约为60%。

关键词 Cs^+ 水泥固化体 浸出行为 浸出机理

分类号

Leaching Behavior of Cs^+ in Cement-Solidified Waste Forms

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Abstract The leaching behavior of Cs^+ in alkali-activated slag-clay minerals composite cement (AASCM) and ordinary portland cement (OPC) waste forms at temperatures of 25, 40, 70, and 90 ℃ was researched. The leaching mechanism was also discussed. The results indicate that the leaching behaviors of Cs^+ in the AASCM and OPC waste forms are quite different. The cumulative leaching fractions (CLF) of Cs^+ in the OPC waste form tend to be a same value at the four temperatures while the CLF of Cs^+ in the AASCM waste form increase with increasing temperature. In the AASCM waste form, the state of adsorption/solid solution Cs^+ is about 90% and the dissolution Cs^+ is about 10%. The existent state of Cs^+ in the OPC waste form mainly includes the solid solution Cs^+ and dissolution Cs^+, which are 40% and 60%, respectively.

Key words cesium ion cement-solidified waste form leaching behavior leaching mechanism

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