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化学

废水组分对离子交换树脂处理含铀废水的影响

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摘要 采用静态吸附和动态柱式实验相结合的方法，研究含铀废水中其它组分对201×7强碱性阴离子交换树脂处理含铀废水工艺过程除铀性能的影响。实验结果表明：溶液中存在的常量阴离子、三乙醇胺和机油等不同程度影响树脂的交换效率或降低树脂的工作交换容量。当溶液中$c(CO^{2-}_3)$ ≥0.24 mol/L、$c(HCO^{-}_3)$≥0.28 mol/L、$c(SO^{2-}_3)$≥0.23 mol/L、$c(Cl^{-})$＞0.09 mol/L时，出水铀质量浓度大于20 μg/L；树脂可允许通过的最大三乙醇胺浓度不应超过250 mg/L；树脂中机油含量大于1%时，树脂的工作交换容量下降16%；树脂中机油含量大于11%时，树脂几乎完全失效。

关键词 离子交换 树脂 放射性废水

分类号 X502

Effect of Ingredients in Waste Water on Property of Ion Exchange Resin for Uranium-Contained Waste Water Treatment

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Abstract The effect of ingredients in waste water on the property of ion exchange resin for uranium-contained waste water treatment was studied by the method of static adsorption combined with dynamic experiment. The experimental result shows that the efficiency or breackthrough volume of resin is reduced if there are other general anions, triethanolamine and oil in the solution. When the concentrations of $CO2^{-}_3$, HCO^{-}_3, SO^{2-}_3, Cl^{-} in the solution are more than 0.24, 0.28, 0.23 and 0.09 mol/L, respectively, the concentrations of uranium in the outlet waste water will exceed 20 μg/L. The maximal allowable concentration of triethanolamine through the resin is no more than 250 mg/L. When the content of oil in the resin exceeds 1%(by quality), the breackthrough volume reduces by 16%, and when it exceeds 11%, the breackthrough volume almost loses at all.

Key words ion exchange _ resin _ radioactive waste water

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