

旋转填料床/柠檬酸盐法吸收-解吸SO₂

Absorption-desorption of SO₂ with sodium citrate method in a roating packed bed

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英文关键词: [roating packed bed](#) [sodium citrate solution](#) [absorption](#) [desorption](#) [SO₂](#)

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中文摘要:

提出采用旋转填料床结合柠檬酸盐法脱除烟气中SO₂的方法,考察了旋转填料床转子转速、液气比、初始柠檬酸根浓度和初始pH值等因素对脱硫效率的影响。结果表明,采用超重力法超重力转子转速为1 000 r/min、液气比为7 L/m³、初始柠檬酸根浓度为1.5 mol/L、吸收液的初始pH值为5.0,脱硫效率稳定在99%左右。研究了水蒸气汽提法解吸SO₂时初始柠檬酸根浓度、初始pH值、SO₂浓度、富液流量和水蒸气流量对解吸效率的影响,得出了影响SO₂解吸率的基本规律,并进行了分析。通过实验证明该方法在技术上是可行的,具有良好的应用前景。

英文摘要:

A method of flue gas desulfurization was applied with sodium citrate method in a roating packed bed. The effects of rotor speed, liquid gas ratio, initial concentration of citrate ions and initial pH value of the absorption solution on SO₂ removal efficiency were investigated. The results showed that the optimum technological conditions of high gravity-sodium citrate method were as follows, rotor speed of 1 000 r/min, liquid gas ratio of 7 L/m³, initial citrate ions concentration of 1.5 mol/L, initial pH value of the absorption solution of 5.0, and SO₂-removal efficiency could reach about 99%. The desorption process of SO₂ in citrate solution under different conditions and factors were explored. Several important factors that may affect desorption efficiency of SO₂ were examined individually using the modified steam stripping device, namely initial concentration of citrate ions, initial pH value of citrate solution, the concentration of SO₂, flow rate of rich solution and water vapor flow. The principle rules of SO₂ desorption were concluded and analyzed. The experimental results have proved the possibility in technique and showed a good application future for absorption-desorption of SO₂ with sodium citrate method in a roating packed bed.

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