

论文

木质素磺酸盐的分离提纯

严明芳, 邱学青, 杨东杰, 胡文莉

华南理工大学制浆造纸工程国家重点实验室, 华南理工大学化学与化工学院, 广州510640

摘要:

以粗木质素磺酸钠为原料, 采用树脂法、超滤法、长链胺法和溶剂萃取法对其进行了提纯. 红外光谱、元素分析、凝胶渗透色谱等测试结果表明, 溶剂萃取法不能达到提纯目的; 树脂法、超滤法、长链胺法可除去相对分子量小于1000的杂质, 粗木质素磺酸钠经提纯后木质素磺酸钠的质量分数从59.0%提高到90%左右, 且提纯产品的重均分子量和数均分子量均增大, 分子量分布更均一. 从产品收率、提纯效果及提纯工艺等3方面分析表明, 长链胺法除糖效果最好, 提纯后糖含量下降了50%; 超滤法的收率最高, 可达31%, 且其提纯产品的重均分子量较高, 达到12000, 比粗木钠提高了1倍以上.

关键词: 木质素磺酸钠 提纯 分子量分布 超滤法

Separation and Purification of Lignosulfonate

YAN Ming-Fang, QIU Xue-Qing*, YANG Dong-Jie, HU Wen-Li

State Key Lab of Pulp & Paper Engineering, School of Chemistry and Chemical Engineering, South China University of Technology, Guangzhou 510640, China

Abstract:

Commercial sodium lignosulfonate(raw SL) was purified with ionic-resin method, ultrafiltration, long chain aliphatic amine extraction and solvent extraction. The structure, composition and molecular weights distribution of raw SL and purified SL were characterized by the Infra-red spectrum, elementary analysis and gel chromatography. The experimental results indicate that solvent extraction doesn't purify raw SL efficiently. Ionic-resin method, ultrafiltration and long chain aliphatic amine extraction removed impurities with molecular weight less than 1000; the content of lignosulfonate in purified SL was raised from 59% to 90%; the number average molecular weight and weight average molecular weight of purified SL were increased. In addition, the molecular weights distribution of purified SL became more uniform. Long chain aliphatic amine extraction could get rid of reducing sugar efficiently, the content of reducing sugar in the purified SL was reduced by 50%. The yield of purified SL with ultrafiltration is the highest, which can reach 31%. In comparison with the raw SL, the weight average molecular weight of the purified SL increase over once. Considering the purified SL yields, the purification efficiency and the purification technology, ultrafiltration is the best favorable purification method.

Keywords: Sodium lignosulfonate Purification Molecular weights distribution Ultrafiltration

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作者简介:

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