

Manufacture of Cobalt-Manganese Acetate(CMA) through remove the impurities from Spent Cobalt-Manganese Bromide (CMB)

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Extended Abstract

Terephthalic acid (TPA) is manufactured by oxidizing the Para-Xylene in condition of catalyst of cobalt-manganese bromide system. The waste containing cobalt is incinerated and buried by the consignment company. This treatment causes problems economically and environmentally. Thus, in this study, cobalt-manganese acetate (CMA) was manufactured from the loaded organic solution by leaching and solvent extraction spent cobalt-manganese bromide (CMB). The solvent extraction experiment was carried out using 40 % saponified cyanex 272 in condition of O/A=4 and 3 step counter-current simulation extraction. As a result, the extraction rate of cobalt and manganese was all 99.9%. This loaded organic solution was stripped using acetic acid (CH₃COOH) through 3 step counter-current simulation stripping test. About 100% of cobalt and manganese was stripped. Finally, cobalt-manganese acetate was produced from 0.88 M loaded organic solution using 50%(v/v) acetic acid as stripping solution. Impurities in product were below 10 ppm of calcium, magnesium, sodium, zinc, copper, iron and lead.