DISSOLUTION OF BASE METALS FROM WASTE PRINTED CIRCUIT BOARDS

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Abstract

The aim of the present study was to determine the most feasible experimental conditions for the dissolution of base metals (Cu, Ni, Zn, Pb, etc.) from waste printed circuit boards (WPCBs) obtained from WMP. The leaching of WPCB samples was performed with FeCl₃ in HCl solution which allowed the separation of a precious metal rich solid residue and a high base metal concentration solution adequate for base metal recovery. The most favorable conditions for the leaching process were identified on the basis of the defined technical key performance indicators at different HCl (0.1 M-0.3 M) and FeCl₃ (0.2 M-0.4 M) concentrations. The highest performances for the dissolution process were obtained at 0.2 M HCl and 0.3 M FeCl₃, in a 4 h period, while at a longer leaching period (24 h) at 0.3 M HCl and 0.3 M FeCl₃.

Key words: efficiency factor, leaching, metals, waste printed circuit boards

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