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CATHODE RAY TUBE (CRT) LEAD GLASS: LEAD LEACHING STUDY AFTER A CHELATING AGENT TREATMENT

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Abstract

This study is focused on the removal of leachable lead present in CRT (cathode ray tube) glass employing different chelating agents, NTA (nitrilotriacetic acid) and ATMP (amino trimetilen phosphonic acid), and then on the evaluation of their extractive capability. The operating conditions are the following: T=80°C, t=1h, pH=10, solid/liquid weight ratio=1/10, reagent concentration= 0.1 M. Afterwards a number of leaching tests at controlled pH were performed in the 5-9 range for 48h at room temperature to define the lead leaching curves for CRT glass matrix and to evaluate the chelating process efficiency.
Experimental leaching curves showed a semi-U-shaped pattern, with maximum lead release at acid pH. Results demonstrated that NTA is able to remove the 66-80% of lead leachable at pH 5.

Key words: chelating agents, leaching tests, lead extractive method, WEEE lead-glass

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