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LEACHABILITY OF HEAVY METALS FROM SLAG RESIDUES UNDER INTENSE TEMPERATURE AND STIRRING CONDITIONS

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Abstract

Air cooled and water cooled slag samples were obtained from a demonstration plasma gasification / vitrification unit. The leachability of the major heavy metals present (Cr, Cu, Mn, Fe, Pb and Zn) in both the air cooled and water cooled slag when in contact with acidic solutions was investigated under different temperature, stirring and contact time conditions. Water cooled slag showed better resistance to heavy metals leaching. The vitrification process immobilised Cr and Pb. The leachability of Cu, Fe and Zn increased by heating and stirring, whereas the leachability of Mn was not affected by temperature and it was found to decrease with combined heating and stirring.

Keywords: gasification - vitrification unit, metal leachability, slag, stirring, temperature

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