

Title (en)
IMPROVED HYDROMETALLURGICAL METHOD FOR THE EXTRACTION OF NICKEL FROM LATERITE ORES

Title (de)
VERBESSERTES HYDROMETALLURGISCHES VERFAHREN ZUR EXTRAKTION VON NICKEL AUS LATERITERZEN

Title (fr)
PROCÉDÉ HYDROMÉTALLURGIQUE AMÉLIORÉ POUR L'EXTRACTION DE NICKEL DE MINÉRAIS DE LATÉRITE

Publication
EP 2054534 A1 20090506 (EN)

Application
EP 07784849 A 20070823

Priority
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Abstract (en)
[origin: WO2008022395A1] An improved hydrometallurgical method (10) for the extraction of nickel from laterite ores, the method comprising the method steps of: i) Forming at least one primary heap (20) from nickel laterite ore material; ii) Leaching the primary heap (20) with a leaching agent (22) to produce an intermediate leach solution (ILS) (24); iii) Recirculating the ILS (24) to the or each primary heap (20) whereby the concentration of nickel in solution approaches saturation, or a steady state to form a pregnant leach solution (PLS) (26); iv) Passing at least a portion of the PLS (26) to an iron precipitation step (28) in which iron is precipitated as hematite at elevated temperature and pressure, releasing acid; v) Directing the discharge from the iron precipitation step (32) to a solid liquid separation stage (34) to produce a waste residue (40) and a clarified PLS (36) containing acid; vi) Irrigating at least one secondary heap (42) of nickel laterite ore material with the clarified PLS (36) to facilitate the leaching of the or each secondary heap and produce a secondary ILS (46); vii) Passing a stream of a reducing gas (50) into the secondary ILS (46) to facilitate the reduction of ferric iron to ferrous iron; viii) Recirculating the ILS (46) over the or each secondary heap (42) to produce a secondary PLS (48); and ix) Directing the PLS (48) from step viii) to a metals recovery circuit.

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