

Title (en)
RECLAIMING OF LEAD IN FORM OF HIGH PURITY LEAD COMPOUND FROM RECOVERED ELECTRODE PASTE SLIME OF DISMISSED LEAD BATTERIES AND/OR OF LEAD MINERALS

Title (de)
RÜCKGEWINNUNG VON BLEI IN FORM VON HOCHREINEN BLEIVERBINDUNGEN AUS RÜCKGEWONNENER ELEKTRODENPASTE/-SCHLAMM VON ALTBLEIBATTERIEN UND/ODER BLEIMINERALIEN

Title (fr)
RÉCUPÉRATION DE PLOMB SOUS FORME DE COMPOSÉ DE PLOMB DE HAUTE PURETÉ À PARTIR DE BOUE OU PÂTE D'ÉLECTRODE RÉCUPÉRÉE DE BATTERIES AU PLOMB MISES AU REBUT ET/OU DE MINÉRAIS DE PLOMB

Publication
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Application
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Priority
IT 2009000344 W 20090730

Abstract (en)
[origin: WO2011013149A1] An all-wet process for reclaiming the lead content of impure electrode paste or slime from discarded lead batteries and/or lead minerals, in form of high purity lead compound, comprises a) suspending the impure lead containing material in a lead sulphate dissolving aqueous solution of a salt belonging to the group composed of the acetates of sodium, potassium and ammonium; b) adding to the suspension sulphuric acid in an amount sufficient to convert all lead oxides to lead sulphate soluble in the acetate salt solution and slowly adding to the suspension either hydrogen peroxide or a sulphite or bubbling sulphurous anhydride through it, in a measure adapted to reduce any lead dioxide to lead oxide converted eventually to soluble lead sulphate by the sulphuric acid; c) separating a limp acetate salt solution containing dissolved lead sulphate from a solid phase residue including all undissolved compounds and impurities; d) adding to the separated solution of lead sulphate either carbonate or hydroxide of the same cation of the acetate salt of the lead sulphate dissolving solution for precipitating highly pure lead carbonate/oxy carbonate or lead oxide or hydroxide, respectively, while forming sulphate of the cation, soluble in the acetate salt solution; and e) separating the precipitated high purity lead compound from the acetate salt solution now containing also sulphate of the same cation of the acetate salt. The acetate salt solution containing also sulphate of the same cation of the acetate salt separated from the precipitated compound of lead is recycled to step a) and the content of sulphate of the same cation in the solution is maintained below saturation limit by continuously or periodically cooling at least a portion of the solution separated from the precipitated lead compound to cause selective crystallization of sulphate salt of the same cation of the acetate salt and removing it as a by-product. Optionally, the separated solid phase comprising insoluble compounds of lead and/or undissolved concretions of lead compounds is treated in hot concentrated hydroxide of the same cation of the selected acetate salt and converting these compounds of lead and/or undissolved concretions of lead compounds to soluble plumbites, and the separated lead containing alkaline liquor may be added to the limp acetate solution for precipitating all reclaimable lead in form of high purity lead oxide or hydroxide.

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Citation (search report)
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