

Title (en)
A METHOD FOR TREATING A WASTE CONTAINING SULFURIC ACID

Title (de)
VERFAHREN ZUR BEHANDLUNG VON SCHWEFELSÄUREHALTIGEM ABFALL

Title (fr)
PROCÉDÉ DE TRAITEMENT D'UN DÉCHET CONTENANT DE L'ACIDE SULFURIQUE

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Application
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Abstract (en)
[origin: WO2016067085A1] A method for treating a waste material (20) containing sulfuric acid and metal ions, as In the case of the waste material the production of the T1O2, provides mixing to the waste material (20) an alkaline reagent (10), selected among a hydroxide of an alkaline metal such as Mg, Zn, Sn, adapted to selectively precipitate (300) the cations as hydroxides, thus obtaining a first mixture (21) having a higher pH that contains a solution (22) of a sulfate and/or oxysulfate of the metal and solid hydroxides (23) of the metal cations that are separated from the first mixture (21) and can be used in metal sulfates production process. The method also comprises mixing the solution (22) with a precipitation agent (31), thus forming a second mixture (32) in which the sulfate and/or oxysulfate precipitates and is removed (301), heated, reduced and decomposed (400) by means of a reducing agent (41) selected among elemental sulfur, hydrogen and a reducing flame, thus obtaining SO2 (42) available for making H2SO4, and a solid oxide (43) of the metal of the alkaline reagent that is recycled (101) as alkaline reagent (10) in the step (200) of mixing with the waste material (20). Advantageously, a step (350) is provided of recovering precipitation agent (31) from the water of second mixture (32), after removing (301) the sulfate and/or oxysulfate, and a step (351) is also provided of recycling the regenerated precipitation agent (31). In particular, an alcohol as ethyl alcohol, used as the precipitation agent (31), can be easily regenerated by distillation, exploiting low temperature-heat, which is largely available from a possible sulfuric acid production plant close to the plant that producing the sulfuric waste material (20). The method according to the invention makes it possible to eliminate the sludge resulting from the sulfuric waste material treatment, while recovering valuable compounds.

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