

Title (en)
METHOD FOR REDUCING TRIVALENT IRON IN THE PRODUCTION OF TITANIUM DIOXIDE ACCORDING TO THE SULFATE METHOD

Title (de)
VERFAHREN ZUR REDUKTION VON DREIWERDIGEM EISEN BEI DER HERSTELLUNG VON TITANDIOXID IM SULFATVERFAHREN

Title (fr)
PROCÉDÉ DE RÉDUCTION DE FER TRIVALENT DANS LA PRODUCTION DE DIOXYDE DE TITANE DANS LE PROCÉDÉ AU SULFATE

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Application
EP 16763441 A 20160718

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Abstract (en)
[origin: WO2017012710A1] The invention relates to the method step of reducing trivalent iron in the production of titanium dioxide according to the sulfate method. According to the invention, after the removal of the poorly soluble decomposition residue, the reduction occurs by means of metallic iron in such a way that the trivalent iron is completely reduced to divalent iron and tetravalent titanium is partially reduced to trivalent titanium in a deliberate manner. A Ti(III) content of 1 wt% to 5 wt% with respect to the total titanium is preferably sought. The method step according to the invention preferably occurs in continuous operation at a temperature of > 50 °C to < 85 °C in a reduction reactor, wherein the progress of the reduction is monitored by means of the redox potential or the iron(III) content or titanium(III) content of the solution. The method according to the invention is characterized by the following advantages: said method can be largely automated, the reduction reaction proceeds steadily, different scrap qualities can be used, and improved TiO₂ product quality is achieved.

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