

Title (en)

Process and apparatus for regenerating a sulfate electrolyte in galvanizing steel strips

Title (de)

Verfahren und Anlage zum Regenerieren von Sulfatelektrolyt bei der Stahlband-Verzinkung

Title (fr)

Procédé et installation pour la régénération d'un électrolyte à base de sulfate dans le zingage des bandes d'acier

Publication

**EP 0728853 B2 20020515 (DE)**

Application

**EP 96101965 A 19960210**

Priority

DE 19506297 A 19950223

Abstract (en)

[origin: EP0728853A1] Dissolved iron present in a sulphate electrolyte used to coat steel strip is removed by taking part of the electrolyte and adding an oxidising agent to oxidise the iron to Fe<sup>3+</sup>. The Fe<sup>3+</sup> is then precipitated from solution by adding ZnO or ZnCO<sub>3</sub>-water suspension as the pH is raised. Any excess ZnO or ZnCO<sub>3</sub> is dissolved in the electrolyte by adding more fresh electrolyte. The precipitated iron is filtered out and the regenerated electrolyte recycled back to the bath. The apparatus for carrying out the process is also claimed. It comprises a coating cell (20) and means for guiding the strip (40) to be coated through it as well as means (43,44) for producing circulation of the electrolyte through the coating cell. The appts. is novel in that it has a reactions container (2) with a stirrer (8) which is connected to the coating cell (20) of the galvanising bath (15) via a take-off conduit (21) and a return conduit (22). An additional container (4) for oxidising agent having a connecting conduit (26) and a dosing pump (27) as well as a further additional container (3) for a ZnO and/or ZnCO<sub>3</sub> water suspension also having a connecting conduit (23) and a dosing pump (24) are connected to the reactions container (2). The dosing pump (24) is actively connected to a pH indicator (30) and the dosing pump (27) is actively connected to a measuring instrument (28) for determining the oxygen content in the electrolyte. A filter (5) for solids is located in the return conduit (22).

IPC 1-7

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IPC 8 full level

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CPC (source: EP KR US)

**C25D 21/18** (2013.01 - EP KR US); **Y10S 204/13** (2013.01 - EP US)

Citation (opposition)

Opponent :

- Ullmans Enzyklopedie der technischen Chemie 3, Aufl. 1969, 19.Band
- Victor Tafel Lehrbuch der Metallhüttenkunde 1953, Band II, Seiten 561-563, S. Hirzel Verlag, Leipzig, 1953

Cited by

EP3875639A1; US2015109507A1; US9509916B2; EP2578727A4

Designated contracting state (EPC)

AT DE IT NL SE

DOCDB simple family (publication)

**EP 0728853 A1 19960828; EP 0728853 B1 19981111; EP 0728853 B2 20020515**; AT E173304 T1 19981115; CA 2168523 A1 19960824; CN 1108399 C 20030514; CN 1136091 A 19961120; DE 19506297 A1 19960829; DE 59600786 D1 19981217; JP 3910657 B2 20070425; JP H08253899 A 19961001; KR 100395519 B1 20040205; KR 960031655 A 19960917; US 5690804 A 19971125

DOCDB simple family (application)

**EP 96101965 A 19960210**; AT 96101965 T 19960210; CA 2168523 A 19960131; CN 96101290 A 19960218; DE 19506297 A 19950223; DE 59600786 T 19960210; JP 3516096 A 19960222; KR 19960002867 A 19960207; US 60000996 A 19960214