

Title (en)
Process for regenerating a processing solution

Title (de)
Verfahren zum Regenerieren einer Prozesslösung

Title (fr)
Procédé de régénération d'une solution de traitement

Publication
EP 1006213 B1 20041215 (DE)

Application
EP 99120998 A 19991104

Priority
DE 19851180 A 19981106

Abstract (en)
[origin: DE19851180C1] Chemical reduction metal plating solution regeneration uses a weakly basic anion exchanger (T1) for hypophosphite ion recycle to the cathodic chamber (3) of a multi-chamber electro dialysis cell. An acid mixture, formed in the second chamber (6) by entry of protons from the anodic chamber (1), is supplied to a hypophosphite-loaded weakly basic anion exchanger with its outlet connected to the cathodic chamber. A chemical reduction metal plating solution, containing hypophosphite and ortho phosphite, is regenerated in a multi-chamber electro dialysis cell having two chambers separated from one another by an anion exchange membrane and which are located between a dilute acid-containing anodic chamber and a cathodic chamber, the first chamber being separated from the cathode chamber by an anion exchange membrane and the second chamber being separated from the anodic chamber by a cation exchange membrane. The solution is delivered to the first chamber for hypophosphite and orthophosphite ion transport from the solution to the second chamber and simultaneous hypophosphite ion transport from the cathodic chamber into the solution, the resulting regenerated solution being discharged for reuse. Preferred Features: Part of the solution, leaving the weakly basic anion exchanger (T1), may be passed over a plating metal ion-loaded, weakly acidic anion exchanger within the first chamber (5) of the cell (EZ). A regeneration circuit is formed by a connection (P1) between the cathodic chamber (3) and the second chamber (6). A further chamber may be provided between the anodic chamber (1) and the second chamber and separated from the second chamber by a cation exchange membrane, this further chamber receiving plating metal ions from the anodic chamber and being supplied with part or all of the process solution (PL) which is then transferred to the first chamber. Plating metal additions are made to the first chamber or to the anodic chamber. The anode (2) may be an insoluble anode, preferably of steel or platinized expanded titanium, or a soluble anode of the plating metal.

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