Nickel-Chromium Focus

Presentation NC3

A Closed-Loop Recovery Process for Plating Wastes Based on Insoluble Hexavalent Chromium

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A process was developed for the recovery of hexavalent chromium from chrome plating wastes. The process involves the precipitation of a majority (>99%) of the waste hexavalent chromium as bismuth chromate at the acidic pH regimes that commonly occur for chrome plating. Once this precipitate is recovered and concentrated, the bismuth chromate is treated with a concentrated sulfuric acid solution that resolubilizes the hexavalent chromium and forms insoluble bismuth sulfate, thereby separating the desired chromium and the bismuth precipitant. A third and final step in the recovery process involves conversion of the bismuth sulfate to soluble bismuth. The commonly used ferrous or bisulfite reduction/precipitation step is retained as a final fail-safe treatment step. A patent application has been filed with the United States Patent Office.

Paper not available.

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