

REFERENCE PROJECT | Improved Performance due to Carbonate Removal at German Zinc-Nickel Plater

Taking bigger steps...
to leave a smaller footprint

The accumulation of carbonate and sulfate in the alkaline ZnNi processes leads to a significantly reduced performance of the electrolyte at a well-known zinc-nickel plater.



THE CHALLENGE

A German zinc-nickel plater was looking for ways to minimize electrolyte waste and to become more sustainable while using future-oriented processes and equipment. Topics such as sustainability and environmentally friendly solutions with consistently high-quality standards have an increasing presence on the industry's agenda. Waste disposal costs are exploding, and many companies have to rethink their waste and wastewater management.

The situation: Carbonates and sulfates were constantly accumulating in the ZnNi bath, thus leading to quality restrictions. Bleed & Feed was used to remove the enriched impurities, and the zinc-nickel deposition remained at a constant quality level. However, Bleed & Feed is a labor- and cost-intensive process that generates a lot of electrolyte waste which the plater wanted to avoid in the future. Therefore, the company decided to install a CarboPure unit.

THE MACDERMID ENVIO SOLUTION

The electrolyte is conditioned using a CarboPure carbonate and sulfate removal unit.

By removing these substances from the plating electrolyte, the salting of the electrolyte is controlled and thus any negative impact on performance is prevented; the electrolyte is enabled to constantly perform at optimum level.

THE RESULT

This **MacDermid Envio solution** has generated significant benefits such as reduced cost, labor and raw material savings and consequently an improved environmental and energy footprint.

Increase in solution conductivity:

- Efficient Carbonate removal
- kWh saving approx. 15-20%
- Reduction of zinc content, drag-out reduction, reduced plating time and current density
- Increased product throughput
- Significant reduction in externally treated zinc-nickel waste



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