

Taking bigger steps...  
to leave a smaller footprint

The international automotive parts manufacturer was searching for opportunities to recover valuable materials, reduce operational cost and minimise the amount of waste discharged.



## CHALLENGE

The customer was pressured to meet the local discharge limits for Nickel whilst recycling materials that would normally be sent for disposal. Providing a solution that also provided a significant cost benefit was highly attractive.

The customers yearly consumption of Nickel Sulfate was 48,000 kg with a cost of **1,536,000 RMB**.

The local wastewater discharge limit for their centralized Industrial Park was **Ni <100ppm**.

## MES SOLUTION

After evaluating the client's challenges, **MacDermid Envio Solutions** found this customer to be an excellent candidate for our NiCycle Nickel recovery system. Our team installed our state-of-the-art **NiCycle** system with enhanced automated controls and continuous nickel recovery. Nickel was recovered as Nickel Sulphate and used directly in their electroplating processes.

### Features:

- NiCycle units use Ion Exchange resin technology
- NiCycle features PLC Controls and Touch Screen
- NiCycle removes Nickel ions from most types of (electrolytic) Nickel rinses
- NiCycle isolates Nickel ions from other plating components
- Bright, Semi-Bright, Satin & Microporous Nickel systems can all be treated to recover Nickel
- High Purity nickel solution is produced for use in all Nickel processes
- Recovered Nickel solutions are free of Organic and Sulphur compounds
- Nickel Sulphate or Nickel Chloride can be produced

## ENVIRONMENTAL BENEFITS

- Reduce: Nickel waste in rinse waters is no longer sent for treatment
- Recycle: Nickel waste normally sent for landfill is reused



See our web site for more details  
[www.macdermidenvio.com](http://www.macdermidenvio.com)

Email: [isenquiries@macdermidenvio.com](mailto:isenquiries@macdermidenvio.com)  
Telephone: +86 512 8818 1201

# CASE STUDY | International Automotive Parts Manufacturer

Taking bigger steps...  
to leave a smaller footprint

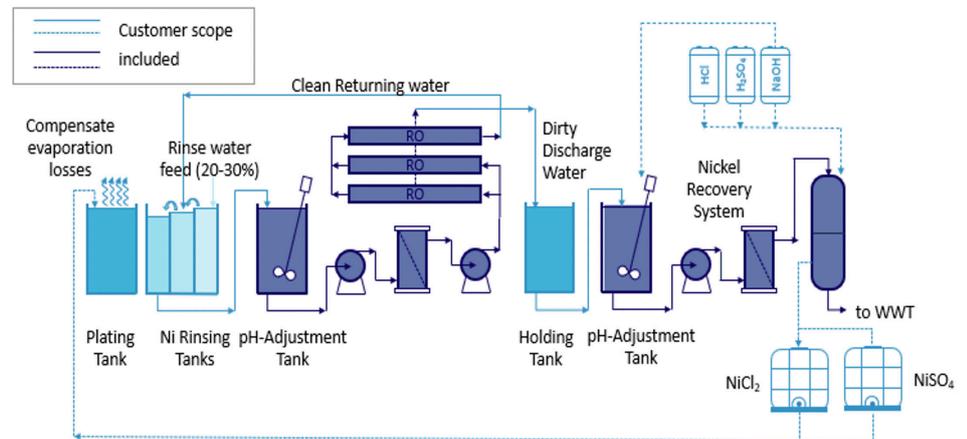


## RESULTS

Our NiCycle unit yielded the following results for the customer:

- In this application, we recovered an average of 90% Nickel from rinse water, yielding up to 43,000kg NiSO<sub>4</sub> per year, saving 1.3M RMB per year
- Significant reduction in waste treatment cost by recycling Nickel waste
- The Nickel concentration in the waste was reduced to below 100ppm, meeting the required discharge limits

## NiCycle system with RO: Schematic



Ask us about



See our web site for more details  
[www.macdermidenvio.com](http://www.macdermidenvio.com)

Email: [isenquiries@macdermidenvio.com](mailto:isenquiries@macdermidenvio.com)  
Telephone: +86 512 8818 1201



An Element Solutions Inc. company

© 2021 MacDermidEnvio.