

# PURSPECTIVE

FOR CHEMICAL RECOVERY

& INDUSTRIAL CHEMICAL PROCESS PROFESSIONALS

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## REDUCE Nickel Purchases & Sludge Costs!

### Lacks Industries Turns Nickel Drag-out Into Nickel Savings with an Eco-Tec Nickel Recovery Unit.

Lacks Industries provides global Automotive OEMs with complete turn-key solutions, from initial concept and design to research and development to final production. Their extensive capabilities in North America, Europe and Asia include thermoplastic design, injection molding, plating, painting and assembly.

Lacks Industries' processes incorporate electroplating, utilizing nickel salts. "Nickel drag-out" is a normal operational occurrence during this electroplating process that typically results in nickel loss and additions to sludge waste.

Lacks Industries already has two Eco-Tec Nickel Recovery Units in operation, and is currently awaiting the commission of their third unit for a facility operating with a nickel drag-out rate of 3.8 kg/h (8.4 lb/h)

### Why Recover Nickel?

Operational costs related to both the replenishment of the nickel, and sludge waste disposal can seriously impact an operation's efficiency.

1. A typical Watts nickel-plating process can lose approximately 2 kg (4.41 lbs) of nickel per hour in drag-out. Based on the current price of nickel sulphate salt of \$14.13/kg of nickel, a plating shop operating for 6000 hours per year loses approximately \$169,560 USD.
2. Nickel plating rinses are considered a hazardous solution and may not be discharged directly into the environment or municipal sewer systems. The rinses



must first be waste treated. This waste treatment results in additional capital and operating costs for waste treatment chemicals, labour and sludge disposal.

### Why an Eco-Tec Nickel Recovery Unit?

Eco-Tec designed the Nickel Recovery Unit (NRU) to effectively, efficiently and economically manage the drag-out. The NRU is specifically manufactured to assist companies like Lacks Industries, in their efforts to increase efficiencies, and lower waste and operating costs.

There are several considerations when determining a company's needs for a NRU, such as:

- Recovery Efficiency
- Productivity and Quality
- Purity, Concentration and pH
- Operating and Capital Cost
- Equipment Size and Layout

The key to Eco-Tec's NRU success is the system's two tier process that first recovers 99% of the dragged out nickel from the rinse waters, and secondly, purifies the nickel to such a degree that the recycled nickel can be placed directly back into the nickel-plating process.

The economic results mirror the two-tier process. With the treated rinse waters free of nickel, the amount of material being sent to waste treatment is lower, which results in less sludge and process costs, and ultimately lower waste treatment costs.

The recovered nickel saves the

company costs through lower nickel replenishment purchases, while continuously maintaining high quality plating.

Lacks Industries has repeatedly purchased Nickel Recovery Units, and like many other plating companies, is reaping the benefits of nickel recovery and purification.

*For your Nickel Recovery Information Package, and a list of other NRU customers, contact us TODAY!*

## Case History of Nickel Recovery

You can review the Case Histories & Technical Papers listed below, from our website [www.eco-tec.com](http://www.eco-tec.com)!

- **Technical Paper 145: Recovery and Purification of Nickel Salt and Chromic Acid Using the Recoflo® System.**
- **Superior Case History**
- **Kohler Case History**
- **Danaher Tool Group Case History**

## Nickel Price Hits All-Time High!!

According to London Merchantile Exchange (LME), October saw Nickel prices reach their all-time high of \$31,950 US per ton equating to \$10.01 US per kilogram (\$14.52/lb).

Nickel Sulphate, used in the electroplating industry, reflects the same increases, with a current price of \$14.13/kg (\$20.50/lb).

The latest news from the Nickel industry suggests that simply due to supply and demand, the price of nickel will continue to climb.

Charles Goodyear, CEO of top global miner, BHP Billiton, reiterated that nickel should continue to exhibit strong demand. As the world's third largest nickel producer, BHP has a good pulse on the market for this metal, and foresees the coming year's global nickel production coming in over 20,000 metric tons short of expectations.

Source: Zeal Intelligence

### Nickel Recovery Units

#### Recent and Upcoming Start-ups:

Kohler, Arkansas

Kohler, China

Lacks, Michigan, USA

Honda, Brazil

Samet, Turkey

## Eco-Tec's Nickel Recovery Unit

The Eco-Tec Nickel Recovery Unit uses deionized water from rinsing, avoiding recovery of tap water contaminants. It does not recover brighteners from rinses and rejects sodium from the rinsewater.

It recovers nickel salt in the correct sulphate/chloride ration and removes acid from the recovered nickel salts to ensure the bath pH is not affected. The system is designed to ensure all nickel can be recycled without any long term effects on the plating bath.

Eco-Tec's Nickel Recovery Unit's advantages over other recovery systems include:

- Concentrated product of 30-40 g/l nickel
- Balanced nickel sulphate-nickel chloride ration
- Partial rejection of monovalent contaminants such as sodium
- No recovery of degraded organic brighteners

#### Nickel Recovery Unit results:

- Recovery of over 99% of all nickel drag
- Recovered nickel is pure and can be safely recycled
- Reduced defects with better coverage
- Reduced chemical purchases = cost savings
- Reduced rework = cost savings
- Reduced waste = reduced waste treatment costs = savings!

*To learn more...Please contact us for your Nickel Recovery System Information package TODAY!*



## About Eco-Tec

Incorporated since 1970, Eco-Tec Inc. is an award-winning, globally recognized manufacturer of water purification and chemical recovery systems for industrial operations.

Eco-Tec Inc. provides proven integrated technologies based on its patented Recoflo® advanced ion exchange process, that offers significant cost reduction and superior process efficiency.

Eco-Tec designs systems integrating advanced ion exchange, based on the customers needs. Eco-Tec has provided more than 1500 systems in over 52 countries, and is represented in all major markets.

*Contact us today to request your Nickel Recovery Information Package!*



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