

# Battery solutions

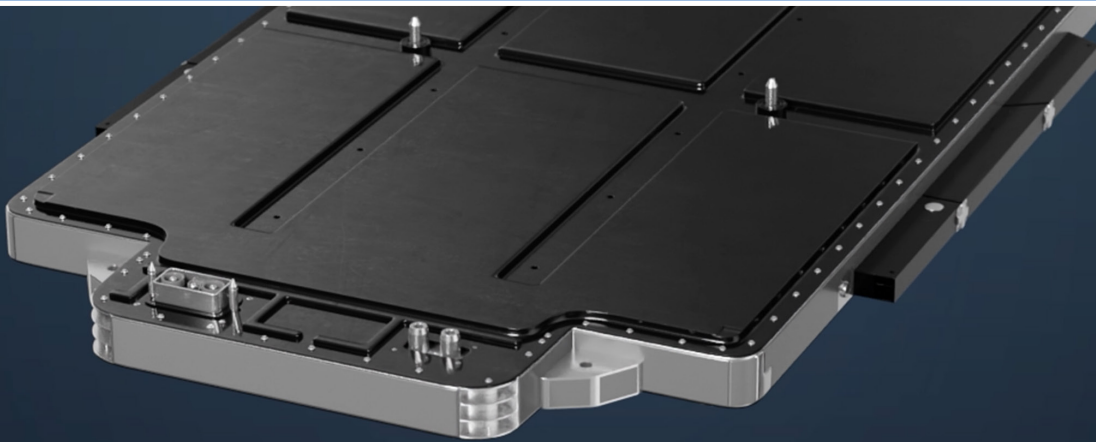
## Steel battery housings



General Metal Finishing

Product portfolio

atotech.com



## Enhancing the durability of the battery pack

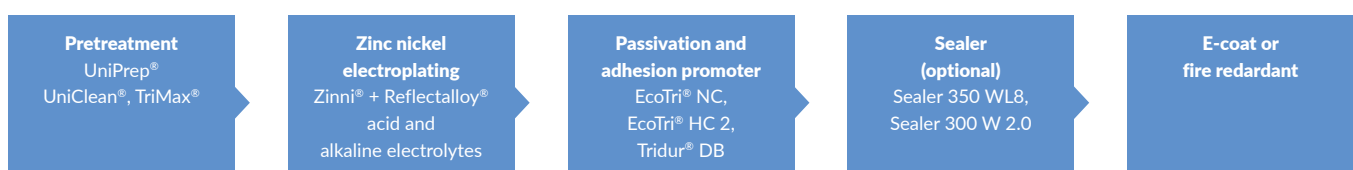
Steel battery housings require electromagnetic shielding and special corrosion protection lasting the vehicle's lifetime. Their surfaces allowing for adhesion to subsequent paint and fire-retardant layers must meet requirements for thermal and dielectric resistance and corrosion protection. Implementing the correct surface finishing solution is essential in achieving all the needed component characteristics.

### Atotech advanced surface treatment for steel battery housings

MKS offers a comprehensive range of sustainable cleaners and surface-finishing processes for battery modules and housings. Highly efficient zinc nickel electrolytes provide unmatched corrosion resistance while our corresponding passivation processes offer seamless adhesion to subsequent paint and fire-retardant layers, resulting in a high-quality finish that meets performance and safety requirements. Our dedicated auxiliary equipment is designed to diminish wastewater generation, water and energy consumption and help reduce the carbon footprint. Our Atotech heat-resistant zinc flake coatings offer excellent corrosion resistance and at the same time fire and heat spreading protection.

Powder paint or fire retardant applications pose challenges on paint applicators. As battery covers are expensive to produce, defective parts reclamation is a must. Our Master Remover<sup>®</sup> paint stripping processes efficiently and sustainably help reclaim high-value parts and clean painted fixtures.

### Pretreatment and electrolytic plating processes for high-strength steel battery housings



# Atotech electrolytic processes and auxiliary equipment for sustainable production

**UniPrep®:** Long life, low temperature degreasing solutions reducing energy consumption and wastewater treatment  
**UniClean®, Tri-Max®:** Full range of soak and electro cleaners  
**Zinni® + Reflectalloy®:** Acid and alkaline zinc nickel electrolytes meeting the highest corrosion protection requirements  
**EcoTri® NC, EcoTri® HC 2, Tridur® DB:** Passivates enhancing corrosion protection and adhesion to subsequent coatings  
**Sealer 350 WL8, Sealer 300 W 2.0:** Organic and inorganic transparent sealers providing superior appearance and corrosion performance

The **CMA (Compact Membrane Anode)** technology inhibits anodic oxidation and prevents the formation of organic breakdown products during the alkaline zinc nickel process. The technology impedes the cyanide formation, which generally proceeds during anodic oxidation in all alkaline zinc nickel electrolytes. Our **Atotech CMA closed-loop system** reduces the volume of sludge (up to 95%), waste, and rinse water. The system enables the decrease of chemical consumption of organic additives (more than 75%), sodium hydroxide (up to 90%), nickel, and zinc.

Atotech ion exchange system – **Tricotect®** – selectively removes contaminating metals from high-performance passivates. Compatible with many Atotech trivalent chromium passivates, the continuous on-line purification operation does not interrupt production, providing a potentially unlimited bath life.

## Atotech zinc flake coatings increase battery safety

The key criterion for electric vehicle safety is battery housing fire protection. Our cadmium, lead, nickel and boron-free zinc flake solutions as single coatings or combined systems pass the required corrosion resistance of 500 – 1,000 hours against red rust and are unsusceptible to heat over 450 °C for a minimum of 10 minutes, preserving vital minutes for EV passengers to disembark in the event of a fire.

**Zintek® 200 XT:** The silver zinc flake base coat provides outstanding corrosion protection with delayed white rust formation.

**Zintek® 200 XT + Zintek® Top XT:** The inorganic, clear top coat combined with the premium base coat provides excellent corrosion protection in NSST and best-in-class performance in cyclic corrosion test.

**Zintek® 200 XT + Zintek® Top:** The clear top coat combined with the base coat increases the corrosion protection.

**Zintek® 400 HT:** The silver organic zinc flake base coat is highly temperature resistant.

**Zintek® 300 HP:** The nearly black inorganic zinc flake base coat offers excellent corrosion protection.

**Zintek® 300 HP + Techseal® Black SL F:** The combination of the organic black top coat and the black premium base coat provides excellent corrosion protection and outstanding chemical resistance.

### Features and benefits

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- Improved quality and productivity
- Reduction of CO<sub>2</sub> emissions
- Energy savings
- Low water consumption
- Wastewater reduction
- Chemical savings

### Features and benefits

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- Reduces chemical consumption
- Reduces wastewater treatment burden
- Reduces overall energy consumption
- Up to 95% wastewater reduction
- Up to 90% of NaOH recycling possible
- Ideal solution to reduce CO<sub>2</sub> footprint

### Features and benefits

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- Eliminates the need for new make-ups and minimizes wastewater
- Significant chemical savings

