



Corrosion and Impact Protection

Advanced Materials and Coatings
for Electric Vehicle Battery Packs

PPG offers a comprehensive mix of market-proven solutions for vehicle corrosion and impact protection.

Electrocoat, powder coatings, and polyurea can be used based on the specific performance requirements, and all will support high volume automated application.

Protecting Metal Pack Shells from Corrosion and Impact

TYPICALLY:

- Steel, Aluminum or mixed substrates
- Coated by Tier, job coater few OEMs

Product/Formulation

- ✓ Ecoat efficient and cost effective protection
- ✓ Powder for improved impact resistance
- ✓ Polyurea for premium underbody
- ✓ Conversion efficiency, environmental +

Application

- ✓ Turnkey equipment options
- ✓ Scalable automation
- ✓ Coatings operation management

Trusted global supplier to OEMs & Tiers

	 Corrosion Protection + Dielectric Properties	 + Extreme Underbody Impact Protection	
	PROVEN SOLUTIONS		
	ELECTROCOAT	POWDER COATINGS	POLYUREA COATINGS
Corrosion Protection	★★★	★★	★★
Edge Protection	★★ - ★★★	★ - ★★★	★★
Impact Protection	★	★★ - ★★★	★★★
Material Utilization	★★★	★★	★
Applied Cost Efficiency	★★★	★★ - ★★★	★

□ Good

□□ Very Good

□□□ Excellent



Electrocoat Protection for Shell Corrosion

- High-performance finish for steel, aluminum and other metals
- Uniform film build
- Color consistency
- High yield rates
- Highly automated
- Applied cost efficiency
- Can be top-coated for added protection
- High edge protection

POWERCRON® Electrocoats

- Ideally suited to metal surfaces
- Uniform film build
- High yield rates
- Highly automated



Powder Coating Protection for Shell Corrosion and Impact

- High-performance finish for aluminum and other metals
- Color consistency
- High yield rates
- Highly automated
- Applied cost efficiency
- High transfer efficiency
- High durability
- High edge protection

ENVIROCRON® Extreme Protection Powder Coatings

- Combines corrosion and impact protection
- Zinc primer / proprietary topcoat system
- Appropriate for metal battery shells
- Widely used on wear-intensive underbody components



Polyurea Coatings: Impact + Corrosion Protection

- Bottom of pack shell can be exposed on underside of vehicle
- Added impact protection may be needed to provide physical and corrosion durability
- PPG polyurea coatings currently utilized on underbody parts, steps and bed liners
- DURABULL® extreme-duty coatings with superior weathering performance
- DRAGONHIDE™ heavy-duty coatings with exceptional value

Polyurea Coatings

- Formulated to protect shell pack surfaces exposed beneath vehicle

ENVIROCRON® Extreme Protection EDGE Powder Coatings

- All the benefits of ENVIROCRON® Extreme Protection Powder
- Plus protects hard-to-cover sharp edges

Knife Edge Corrosion Test

Measures the ability of an electrocoat to cover sharp metal edges. Coated knife blades are placed in a 5% salt spray cabinet for 168 hours and rust spots are counted along the sharp edge using a 30x power magnifying lens.



Conventional Electrocoat: >100 Rust Spots



POWERCRON® AdvantEdge™ Electrocoat: <5 Rust Spots