MATERION

Product Brief

iON EV™ Clad Connectors

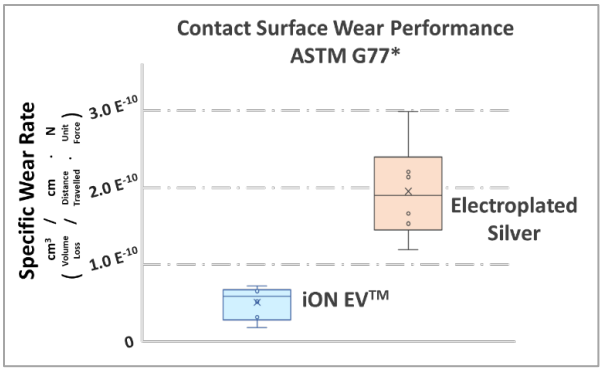
For High Power Charging

Materion's proprietary silver contact system is designed for long-life durability for electric vehicle charging.

1.800.375.4205 | materion.com/ionevclad

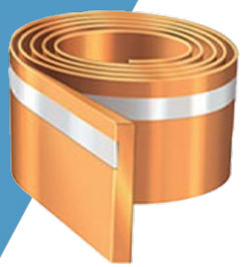
Outstanding High-cycle Wear Performance

In use, iON EV Clad achieves durability that far exceeds 10,000 connection cycles with a contact surface that is up to eight times more wear resistant than traditional electroplated silver.



Low Coefficient of Friction

- Low insertion force
- High wear resistance



Coefficient of Friction	Specific Wear Rate	Surface Hardness
0.20	$5.3 \times E^{-11} \frac{cm^3}{N-cm}$	105 HV

Reported values are nominal

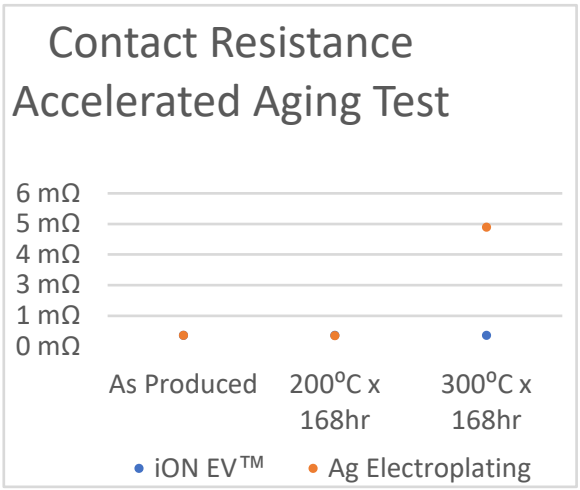
*Block on ring test IAW ASTM G77 – 5µm contact surface wearing against an electroplated silver ring with a 4N normal force

Exceptional High Temperature Stability – Rated to 200°C

A fully dense, wrought microstructure enhances surface nobility, providing a stable contact resistance over the life of the connector.

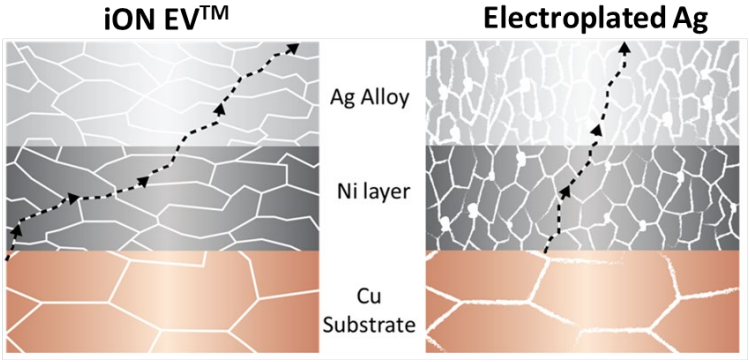
Contact Resistance

Contact Resistance [mΩ]	iON EV™	Ag Electroplating
Produced	0.46	0.45
200°C x 168hr	0.46	0.44
300°C x 168hr	0.46	4.87



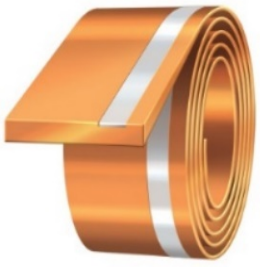
Surface Nobility

Slowing copper diffusion to the contact enhances surface nobility.



Wrought Grains, Dense Boundaries, Long Diffusion Path, Slow Diffusion

Columnar Grains, Porous Boundaries, Short Diffusion Path, Fast Diffusion



Flexible Design Options

- Customized cross-sections up to 2mm thick
- Wide range of contact surface thicknesses
- Precision inlay location, thickness, and width control
- Available using any commercial copper alloy
- Optional stainless steel backing layer for increased stiffness

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