

# EVABRITE WS1 / WS1-E

Water-Based Anti-Tarnishes for Silver Connectors

## Lasting Tarnish Protection for Functional Silver Surfaces

**EVABRITE WS1 / WS1-E** are a series of anti-tarnishes for silver surfaces that provide excellent tarnish resistance without impacting the performance of the coating for functional use.

EVABRITE anti-tarnishes have been trusted by global connector manufacturers for their ease of use and long-lasting performance. The EVABRITE WS1 / WS1-E are the latest updates to the EVABRITE series of silver anti-tarnish processes. The modifications provide the same performance while meeting the new regulatory requirements restricting the use of OPE's or NPE's. The EVABRITE WS1 is a one-component immersion-based process, while the WS1-E is a two-component electrolytic process. Both processes provide a protective self-assembling monolayer onto silver deposits that inhibits tarnish and retains the desirable characteristics of the silver surface.



## KEY FEATURES

- Excellent protection against tarnish from environmental sulfur
- Does not contain OPE's /NPE's, meeting regulatory compliance
- Near-zero impact on silver deposit contact resistance
- Compatible with reel-to-reel and rack/barrel applications
- Electrolytic or immersion application variation available
- Stable solution that is easy to maintain



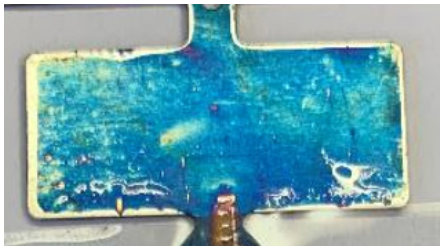
# EVABRITE WS1 / WS1-E

Water-Based Anti-Tarnishes for Silver Connectors

## Tarnish Protection You Can Count On

For harsh environments such as those encountered in automotive applications, silver plated connectors need to have long-lasting performance that does not degrade over time. EVABRITE WS1/WS1-E processes apply a self-assembled monolayer (SAM) topcoat that protects the surface of the silver metal from sulfurized atmospheres. The coating is thin enough that it does not impact the contact resistance.

### Potassium Sulfide Test – 2%wt, 5min Immersion, Room Temperature



Untreated



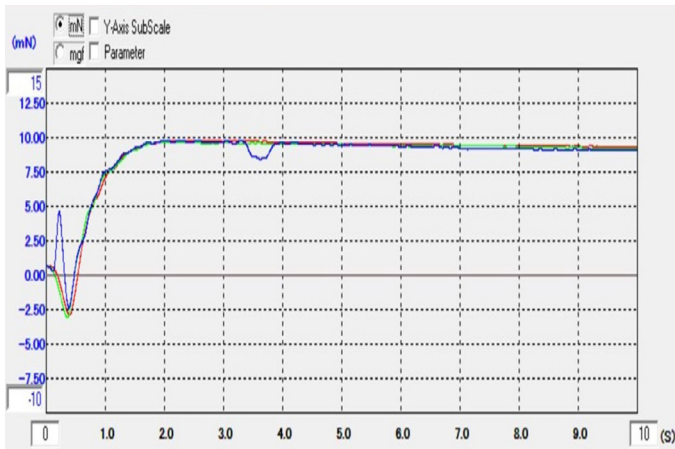
10sec Treatment WS1-E



1min Treatment WS1

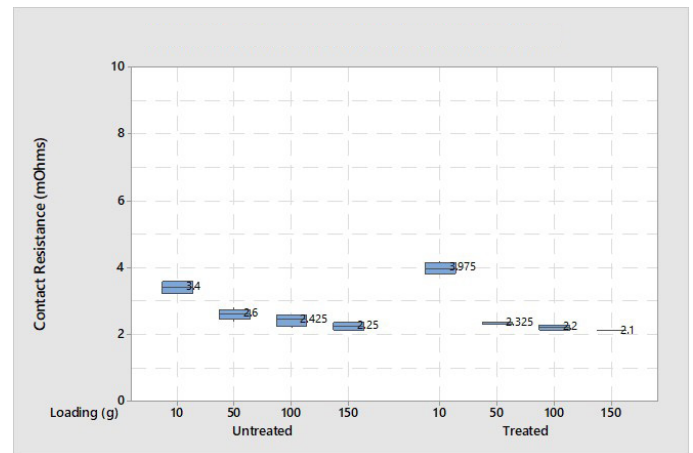
## Retains Optimal Silver Surface Performance After Coating

### Solder Wetting Balance Test



The solderability of silver deposits treated with EVABRITE WS1 /WS1-E treated silver deposits is excellent after exposure to 2X lead free reflow cycles, displaying excellent protection from sulfur bearing atmospheric compounds.

### Contact Resistance of Untreated vs EVABRITE WS1-E



Coating with EVABRITE WS1/WS1-E shows contact resistance will not be impacted by the protective layer, with performance nearly identical to that of untreated fresh silver deposits.



[macdermidalpha.com](http://macdermidalpha.com)

MacDermid Enthone is a product brand of MacDermid Alpha Electronics Solutions. © 2021 MacDermid, Inc. and its group of companies. All rights reserved. "(R)" and "TM" are registered trademarks or trademarks of MacDermid, Inc. and its group of companies in the United States and/or other countries.