

CASE STUDY

Eco Draw® HVE1 is *formally* automotive approved.

It is officially approved for use by Ford, GM, Mercedes, Honda, Nissan, Toyota, Mitsubishi, Hyundai & subsidiary OEMs

Automotive Approval Test Summaries

Independent laboratories under the stringent requirements of the Auto/Steel Partnership (A/SP) have tested Eco Draw HVE1. The following characteristics have been evaluated. **Specific empirical data and test results are available by reaching us in the CONTACT US section:**

- Weldability
 - Anti-Corrosion Characteristic
 - Cleanability
 - Effect to Phosphating (Henkel & PPG systems)
 - E-Coat Compatibility
 - Compatibility with all Sealers and Adhesives
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- Resistance weld tests were performed on both galvanized steel and aluminum. In each respective test Eco Draw HVE-1 was applied at use solids of 15% and compared to a control lubricant that was applied at ~3%. The coated panels were welded and were then mechanically pulled apart. The weld button was measured. Even at the higher residue level, Eco Draw HVE-1 surpassed the required 2000 welds with no adverse effects.
 - Eco Draw HVE1 was evaluated at a very dilute solution 1:19 (3% solids) for its anti-corrosion characteristics. The sandwich tests study the overall and potential contact corrosion in extreme relative humidity. Eco Draw HVE1 received a 10 out of 10 rating on CRS, hot dip galvanized, electro galvanized, hot dip galvanneal, electro galvanneal, and aluminum. The lubricant was also tested in condensing humidity. Typically water-soluble lubricants are rinsed off by condensation. Eco Draw HVE1 has a unique boundary feature that performed well in this test. While it did not outperform a petroleum control, it performed well enough to pass this portion of the test.
 - In cleaning tests, Eco Draw HVE1 reduced surface carbon levels below that of the control panel. This effect was enhanced as the relative cleaner baths were contaminated up to 2%. A copper sulfate plating test described reinforces these results. As a soil load in cleaner baths, Eco Draw HVE1 actually enhances cleaning characteristics.
 - Eco Draw HVE1 did not contaminate e-coat paint. The specific test involved dipping a panel in e-coat and allowing Eco Draw HVE1 to boil onto the painted panel during curing.
 - Eco Draw HVE1 was tested by all existing suppliers of sealers and adhesives. Each company produced a letter that explicitly states, “We see no anticipated manufacturing or engineering performance concerns with using this lubricant with all of our products.”