

Advenira® ClearCorrUV® SDN® Nanocomposite Coating

Product Description

ClearCorrUV SDN® nanocomposite coating has been developed to provide direct to metal barrier coating for anticorrosion applications. ClearCorrUV can be used in conjunction with conversion coatings, when required, to provide superior corrosion protection.

Product Features

- Colorless, transparent, with excellent gloss
- Suitable for a wide range of pH exposure, ranging from strongly acidic or mildly alkaline environments (pH 0-10).
- Excellent resistance to hydrochloric acid, sulfuric acid, and salt water.
- Low water uptake.
- Compatible with commercial top coats.

Abrasion: Good resistance to abrasion and mechanical damage.

Adhesion: Excellent on correctly degreased and corrosion free surfaces, including steel, aluminum, galvanized steel, Mg-alloys, and stainless steel.

Chemical Resistance: The fully cured coating offers excellent resistance to aqueous solutions and a wide range of industrial chemicals.

Temperature resistance: Dry service temperature range up to 125°C.

Curing: Coating can be cured to final properties within minutes with appropriate UV exposure.

Properties:

| Property | Value(s) |
|-----------------------|--|
| Color | Colorless/Transparent |
| Curing Time | < 5 min. |
| Wt% Solids | 100% |
| Viscosity | 115 cP @ 25°C (Brookfield cone/plate) |
| Specific Gravity | 1.15 |
| Film Thickness | 10 – 250+ μm |
| Coverage | 780 m ² /kg/μm |
| Shelf Life (unopened) | 2 months |

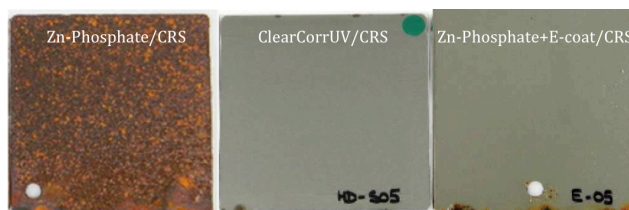
Performance Data:

| Property | Value |
|---|---|
| Abrasion Resistance (ASTM 4060) | 13.8 mg/1000 cycles 4.2 μm/1000 cycles (Taber 5135, 1 kg, CS-10) |
| Pull-off Adhesion (ASTM D4541) | 18-20+ MPa (steel, Al, stainless) |
| Hardness (ISO 14577-1) (ASTM D3363) | 19-23 (Vickers) 180-200 MPa (Martens) 4H (Pencil) |
| Accelerated Corrosion resistance | CRS - Pass 60 cycl. SAEJ2334 Al - Pass 72 cycl. GMW15282 |
| Corrosion Resistance (Acid Bubble Test) | >250 hr/μm - 1M H ₂ SO ₄ >250 hr/μm - 1M HCl >150 hr/μm - 12M HCl |
| Thermal Cycling | Pass 100 cycl. -50°C – 125°C |
| Dielectric Breakdown Strength | 120 V/μm @ 20°C DBV > 3.5kV @ 25 μm thickness |
| Damp Heat | Coatings on Al and CRS passed 1000 hr 85°C/85%RH exposure – no cracking or delamination in the coating; no metal corrosion. |

Selected ANSI 61 water extraction test data

ND – not detected.

| Parameters: | Amount | Unit |
|--|--------|------|
| Heavy Metals (HMS): Zn – US EPA limit is 5 mg/L | 0.04 | mg/L |
| Other HMS: As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mo, Ni, Se, Ag, Tl, V, Hg | ND | mg/L |
| Halogenated compounds (chloroform etc.) | ND | μg/L |
| Phthalates | ND | μg/L |
| Toxic solvents (benzene, pyridine etc.) | ND | μg/L |
| Gasoline, diesel, motor oil | ND | mg/L |



Comparison of coated panels after 80 cycles SAEJ2334 testing. From left to right: Zinc- phosphate coated CRS, ClearCorrUV coated CRS, and Zn-phosphate+E-coat coated CRS panels.