

Advenira® ClearCorr™ SDN® Nanocomposite Coating

Product Description

ClearCorr™ SDN nanocomposite coating has been developed to provide direct to metal barrier coating for stainless steel and aluminum anti-corrosion applications. It is also applicable as a anti-scratch/hardcoating for metals and plastics.

Product Features

- Colorless, transparent, with excellent gloss
- Suitable for a wide range of pH exposure (pH 0-10).
- Excellent resistance to hydrochloric acid, sulfuric acid, and salt water.
- Epoxy functionality provides compatibility with many topcoat formulations.
- Two variants: one has enhanced abrasion resistance (2x lower ΔHaze) and one has enhanced corrosion resistance (20+% better) relative to each other.

Abrasion: Excellent resistance to abrasion and mechanical damage. Taber abrasion superior to stainless steel, electroless-Ni, Type III anodization.

Adhesion: Excellent on correctly degreased and corrosion free surfaces.

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

Temperature resistance: Dry service temperature range up to 150°C.

Properties:

Property	Value(s)
Color	Colorless/Transparent
Curing Time	Typically 30 min to 1 hr
Wt% Solids	60%
Viscosity	9 cP @ 25°C (Brookfield cone/plate)
pH	Acidic
Specific Gravity	1.07
Film Thickness	1-20 μm
Coverage	80 m ² /kg/μm
Shelf Life (unopened)	1 month (refrigerated)

Advenira® ClearCorr™ Specification Sheet 1.0

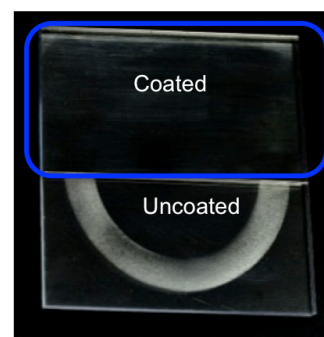
Performance Data:

Property	Value
Abrasion Resistance (ASTM 4060)	1.4 mg/1000 cycles
(ASTM D1044)	0.15 μm/1000 cycles (Taber 5135, 1 kg, CS-10) ΔHaze <2% (1000 cycles) (Taber 5135, 500 g, CS-10F)
Pull-off Adhesion (ASTM D4541)	18-20+ MPa (Al, Stainless)
Hardness (ISO 14577-1)	100-115 (Vickers)
(ASTM D3363)	400-450 MPa (Martens) 8-9H (Pencil)
Accelerated Corrosion resistance	Al - Pass 72 cycl. GMW15282
Corrosion Resistance (Acid Bubble Test)	>250 hr/μm - 1M HCl
Thermal Cycling	Pass 100 cycl. 25°C - 125°C
Dielectric Breakdown Strength	140 V/μm @ 20°C DBV ≈ 3kV @ 20 μm thickness

Selected ANSI 61 water extraction test data

ND - not detected.

Parameters:	Amount	Unit
Heavy Metals (HMS): Zn - US EPA limit is 5 mg/L	0.023	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



Abrasion comparison between ClearCorr coated and uncoated polycarbonate after ASTM D1044 test.