

# Nano-Clear VV-300 Hard Coating

Nano-Clear® VV-300 is a high gloss, multi-functional direct-to-PC polycarbonate and glass coating. VV-300 provides a permanent covalent bond to manufactured polycarbonate, TPO, ABS plastics and glass. VV-300 improves optical clarity and provides remarkable scratch resistance, water, dirt, oil and ice repellency, chemical resistance, UV and heat resistance.

Nano-Clear VV-300 is designed to dramatically extend the surface life of glass and plastic components while significantly reducing surface maintenance by 75%. VV-300 is a 3D nano-structured polymeric coating.



## 10 YEAR PERFORMANCE

### TECHNICAL ADVANTAGES OF VV-300 High Gloss Clear Coating



- **Multi-Functional Properties:** Test results on pg. 3
  - Hydrophobic, Oleophobic & Ice Phobic
  - Optically Crystal Clear - Improves Visibility
  - Highly Chip & Abrasion Resistant
  - Highly UV & Weather Resistant
  - Heat Resistance up to 600°F / 315°C
- **Additional Benefits**
  - One-step application process - easy wipe-on or spray application
  - Extreme Scratch Resistance: 8H-9H pencil over glass / 4H over PC
  - Extreme Solvent Resistance: (>1500 MEK rubs) and cleaner resistance
  - Green Technology - low odor and no VOC



### APPLICATION POTENTIAL

- Polycarbonate PC Headlight Lenses
- Manufactured PC Parts
- Manufactured PC Windshields
- Manufactured PC Light Fixtures
- Manufactured Glass Solar Panels



### SURFACE PREPARATION

New polycarbonate requires surface cleaning with a suitable non-etching cleaner. Glass requires cleaning with a suitable glass cleaner to remove surface contaminants.

#### Polycarbonate & Glass

Nano-Clear VV-300 is designed to be wiped-on using a **Suede Microfiber Cloth** covered over a **Soft Black Foam Applicator** or sprayed using an HVLP gun. Ensure the suede cloth / foam applicator edge is fully **saturated** to ensure a smooth and even **wet** application.

- **Wipe-On:** Apply 1 wet coat using a **side-to-side** motion while avoiding streaking. Gently remove any excess wet material from surface with applicator to achieve an even-finish.
- **Spray:** Apply 1 wet coat @ 1 mil WFT (.10 DFT mil) using an HVLP spray gun with a 1.4 mm tip.



## SET TIME



- Dust-free time in 10 min. @ 72°F and 50% R.H.
- Tack-free time in 30 min. @ 72° and 50% R.H.
- Full cure in 24 hr. @ 72° and 50% R.H. May also be baked @ 140°F for 30 min.
- Coverage: 320 sq.ft. (74 m2) per gal. when sprayed at 1 wet coat (.10 mils DFT)

## EQUIPMENT CLEAN-UP



- Clean application equipment immediately after use with Acetone or MEK.
- **DO NOT** clean application equip with water or alcohol.

## STORAGE AND SHELF LIFE INFORMATION



- **UNOPENED:** 12 months, tightly capped and in original container.
  - **OPENED:** 2 months, tightly capped and in original container.
- NOTE:** Container must be closed and capped immediately after product dispensing to prevent and reduce solvent evaporation.



- **TEMPERATURES:** Store opened and un-opened **VV-300** in a dry and low light area at temperatures between 40°F / 4°C and 72°F / 22°C. Higher temperatures will decrease shelf life.

## HEALTH AND SAFETY

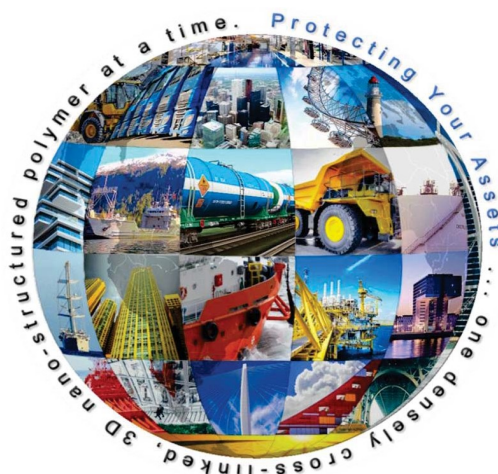


**Nano-Clear VV-300** is not to be used for purposes other than those specified. The information within this TDS is based on past, present, and ongoing scientific and technical knowledge, and it is the responsibility of the user to take all necessary steps in order to ensure the suitability of the products for the intended purpose. For Health and Safety information, please refer to the material **Safety Data Sheets (SDS)**.

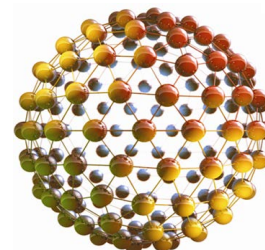
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Nano-Clear 3D Polymer





## VV-300 Hard Coating - Test Results

SINo	Characteristics	Test Results	Method of Tests
1	Gloss at 60°	92.0 - Excellent	SASO 2833
2	Scratch Hardness w/ Mitsubishi Pencil	8H-9H Pencil Hardness (over glass)	ASTM D3363
3	Abrasion Resistance (Loss in weight)	8.5mg – Excellent	ASTM D4060
4	Impact Strength	1kg – 160cm - Excellent	ASTM D2794
5	Mar Resistance	5.0 kg - Excellent	ASTM D5178
6	Alkali Resistance	Excellent	SASO 2833
7	Acid Resistance	Excellent	SASO 2833
8	MEK Resistance	> 1500 cycles (No effect on gloss - Excellent)	ASTM D4752
9	Flexibility	Passed 1mm mandrel test - Excellent	SASO 2833
10	Adhesion (Metal Surface)	3 Mpa (Very Good)	ASTM D4541
11	Cross Cut Adhesion	Excellent - Rating 10	SASO ISO 2409
12	Flexibility Cylindrical Mandrel	3 mm Passed (Excellent)	SASO ISO 1519
13	Flammability: Retardant / Flame Spread	Class 1 / Class A (Excellent)	ASTM E84
14	Temperature Resistance	-40°F to 500°F (-40°C to 260°C)	ASTM D2485
15	Accelerated Weathering (4000 hours)	Excellent (Change in color and gloss <1%)	ASTM G155

Nano-Clear 3D Polymer

