



Nano-Clear SuperCARC Matte Finish Overcoat - TDS



Nano-Clear SuperCARC is a two-component matte finish clear overcoat (*Nano-Clear NCI Coating + Nano-Clear NCIM Matting Additive*). SuperCARC penetrates deep into the pores of military or CARC paints to dramatically improve chemical resistance, corrosion resistance, surface hardness and long-term UV resistance with 50% reduced surface tension. *SuperCARC is the world's first matte finish clear coating designed to be applied directly **OVER** conventional military and CARC paints as a final overcoat.*

Nano-Clear® SuperCARC physical properties are far superior to conventional CARC paints when used alone.

APPLICATION USES

Produces a highly durable matte finish clear coating over freshly painted or in-service painted surfaces including 1K & 2K CARC paints, 2K epoxy and 2K polyurethanes, powder coatings, cement, wood and fiberglass.

Application Potential: Military Vehicles, Military Equipment, Military Aircraft, Navy ships, Helicopters, Cement, Chemical Tanks, Heavy Duty Equipment, Agriculture Equipment...

- Designed to be applied directly over one-component and two-component paints.
- Extends in-service life of newly painted or in-service painted surfaces.
- Significantly reduces decontamination time of biological agents (>50%).
- Extreme scratch resistance (7H pencil hardness).
- Extreme chemical resistance (>1500 MEK rubs) and biological agent resistance.
- Extreme weathering resistance (4000 hour Xenon ~ no gloss loss).
- Extreme corrosion resistance (6000 hr salt spray with no corrosion)



PAINT / MATERIAL COMPATIBILITY

- Designed to be applied over **newly painted** CARC, 2K epoxies, 2K polyurethanes, powder coatings, cement and wood.
- Designed to be applied over properly prepared **in-service** CARC, 2K epoxies, 2K polyurethanes, powder coatings and wood.

NANO-CLEAR APPLICATION CONDITIONS

Temperature: 40°F (4°C) to 100°F (38°C)

Relative Humidity: 20% to 90%

PHYSICAL PROPERTIES

Polymer Chemistry: Nanostructured Polyurethane Hybrid

Mixing Ratio: No mixing required

Recommended Dry Film Thickness: 2 mil (50 µm)

Recommended Wet Film Thickness: 6 mil

Pencil Hardness - ASTM D3363: 7H

Pendulum Hardness (Persoz) - ASTM D4366: 220

Abrasion Resistance - ASTM D4060: 8.4 mg loss

Impact Strength - ASTM D2794: > 140

Water Immersion Test - ISO 2812-2: Pass

QUV Resistance - ASTM D4587: 99%

Xenon WOM - ASTM G155: 99%

MEK Resistance - ASTM D4752: >1500

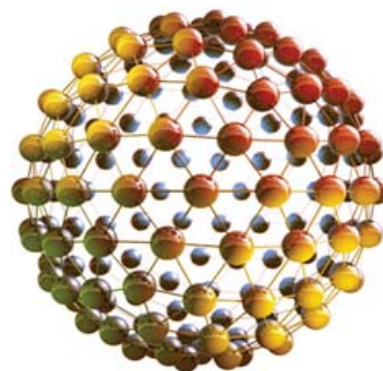
Salt Spray - ASTM B-117: 5000 hrs. no rust, no blisters

DMA – Crosslink Density - (X103 mol/m3): 2.17

VOC (as received): 1.05 lbs. / gal.

Viscosity: 200 cps

NANO-CLEAR 3D POLYMER





APPLICATION INFORMATION

Consult SDS for proper handling, cleanup, disposal, and use of personal protective equipment. Circulate sufficient air to maintain working environment below the PEL and LEL. Apply according to local, state, and federal (OSHA) regulations.

- Ambient temperature: 40°F (4°C) to 100°F (38°C)
- Relative Humidity: 20% to 90%
- Metal temperature: 40°F (4°C) to 100°F (38°C)
- Surface temperature: At least 5°F (-5°C) above the dew point
- Material temperature: 40°F (4°C) to 90°F (32°C)



SURFACE PREPARATION

Newly Painted / Wet-on-Wet Paint Application:

- Apply directly over military paint, CARC (chemical agent resistant coating), 2K epoxy, 2K polyurethanes, powder coatings.
- Allow solvents to fully evaporate-out from the underlying paint prior to the application of SuperCARC (typically **3-6 hours**).

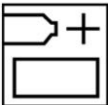
Cured Paint or In-Service Painted Surfaces:

- Repair any structural damage (rust or chipping) using a DTM two-component epoxy or two-component polyurethane.
- Surface must be sanded with 400 grit **orbital sander**, then solvent clean using acetone.

ADMIX PROCEDURES



1. **Shake NCIM Matting Additive container vigorously prior to admixing with NCI to avoid sedimentation**
2. Using an appropriate sized painter's cup, weigh **Nano-Clear NCI (Part A)** on an electronic scale. **DO NOT** remove cup from scale once weight is established.
3. Record the weight figure for the NCI. (**NOTE this figure can be applied to the test panel label**)
4. Next refer to the **Admix % by Weight Table below** to determine the desired *Finish* for your project.
5. Calculate and use this weight figure for **Nano-Clear NCIM Matting Additive (Part B)**.
6. Record the weight figure for NCIM. (**NOTE this figure can be applied to the test panel label**)
7. Use the NCIM (**Part B**) weight figure and Admix it to the NCI (**Part A**).
8. Recap the NCIM container immediately after dispensing to avoid solvent evaporation.
9. Stir mixture thoroughly with a 1/2" to 1" spatula for ~60 seconds.
10. The NCI + NCIM mixture (**Nano-Clear SuperCARC**) is now ready for spray application.



Desired Finish	Part A: NCI	Part B: NCIM
Matte	100%	20 – 27%
Eggshell	100%	10 – 20%
Semi-Gloss	100%	10%

Full Matte Finish Example:

Part A: Add 1000 grams (100%) of NCI into container

Part B: Add 270 grams (27%) of NCIM into container

Stir mixture thoroughly with a 1" spatula for ~60 seconds



WET-ON-WET SPRAY APPLICATION

- Apply **3 - 4 wet coats @ 2 mils** per each wet coat using an HVLP spray gun (1.4 mm spray tip).
- **Allow no less than 10 - 15 min. between each wet coat to allow for solvent evaporation.**
- Avoid recoating additional coats after 30 min. as flow and leveling will be negatively effected.
- Recommended (Wet Film Thickness WFT): 2 - 3 mil per each wet coat (6 mil wet film build total).
- Recommended (Dry Film Thickness DFT): 2.00 to 2.50 mil depending on surface properties desired.



Solvent Flash: Allow 10 to 15 min. between wet coats at 72°F (22°C) to allow for solvent evaporation.

THINNING

- No thinner is required as Nano-Clear has very low viscosity.



CURE TIME @ 72°F (22°C), 50% R.H.

Dust free: ~ 40 - 50 minutes
Tack free: ~ 50 - 60 minutes
Handle: ~ 6 hours
Dry Hard: 24 hours @ 72°F (22°C)
Full Cure: 48 hours @ 72°F (22°C)

CURE TIME @ 90°F (32°C), 50% R.H.

Dust free: ~ 30 - 40 minutes
Tack free: ~ 40 - 50 minutes
Handle: ~ 4 hours
Dry Hard: 24 hours @ 90°F (32°C)
Full Cure: 48 hours @ 90°F (32°C)

* Lower temperatures and lower humidity conditions will slow-down the curing rate.

* Higher temperatures and higher humidity conditions will speed-up the curing rate.

* **Nano-Clear NCA Accelerator may be added to NCI @ 1-2% by weight to reduce dust-free and tack-free time.**

EQUIPMENT CLEAN-UP

Clean equipment immediately after using Acetone. Never clean spray equipment with water or alcohol.

SURFACE COVERAGE PER GALLON

333 ft² / gal @ 2.00 mil DFT or 31 m² / 3.8L @ 2.00 mil DFT (3 wet coats @ 2.00 mils each wet coat = 6.00 mil wet total).

WEIGHT PER GALLON

8.0 lbs (3.63 kg)

PACKAGING

1 gal (3.8L), 5 gal (19L), 55 gal (208L)

SHIPPING WEIGHT: Nano-Clear NCI or Nano-Clear NCIM Matting Additive

1 gal container - 8 lbs (3.63 kg), 5 gal container - 40 lbs (18.14 kg), 55 gal container - 440 lbs (200 kg)

TRANSPORTATION, STORAGE & SHELF-LIFE

Transportation: Min. 40°F (4°C) and Max. 86°F (30°C) for short periods.

Storage & Shelf-Life: Un-opened Container:

40°F (4°C) Minimum: 12 month

72°F (22°C) Max: 12 month

80°F (27°C) Max: 6 month

90°F (38°C) Max: 2 month

Storage & Shelf-Life: Opened* Container:

80°F (27°C) Max: 2 months

*Opened is defined as cap is opened-and-closed immediately after pouring contents to avoid solvent evaporation / contamination.

SAFETY INSTRUCTIONS

Consult Nano-Clear NCI and Nano-Clear NCIM Safety Data Sheet prior to use.

APPLICATION EQUIPMENT

- Apply using HVLP, Conventional or Airless spray equipment.



AIR SPRAY EQUIPMENT

Spray Gun: HVLP or LVLP (SATA, Devilbiss or Iwata)

Fluid Tip: 1.3 mm or 1.4 mm

Fan Pattern: Full fan, when applying 3 - 4 wet coats @ 2 mil each wet coat (6 mil wet total)

Fluid Control: 2 1/2 turns out

Spray Pattern: 50% overlap

Pressure at Gun: 29 - 30 PSI

AIRLESS SPRAY EQUIPMENT

Tip Size: Graco 415, 515 or 615 or 815 spray tip

Pump: 30:1 or 40:1

Pump Pressure: 800 psi

SURFACE MAINTENANCE / CLEANING

- Use low pH soap and water for clean-up.
- Use lint-free microfiber cloths to clean and dry surfaces.
- Use paint thinner or acetone to remove graffiti.

IMPORTANT COMMENTS

1. Use dedicated spray lines and equipment for the best results. Clean equipment immediately after use using paint thinner or acetone. Avoid contact with skin and hair as Nano-Clear will adhere like super-glue.
2. Avoid recoating after 30 minutes as flow and leveling will be effected.