# Nano-Clear NC 40 Industrial Coating - TDS









## High Gloss Polyurethane Hybrid Clear

Nano-Clear NC 40 (40% solids) Coating is designed to be applied over painted assets to provide a high-gloss, scratch resistant surface. NC 40 has excellent surface hardness, flexibility, chemical, corrosion and long-term UV resistance. Applications for NC 40 include fleet vehicles and industrial assets. NC 40 is based on polyurethane hybrid chemistry.

**Nano-Clear® 1K physical properties are far superior to leading 2K & 3K industrial and fleet coatings.**

### APPLICATION USES

Produces a highly durable high-gloss clear coating over freshly painted or in-service painted surfaces including 2K epoxies *(2K = two-component)*, 2K polyurethanes, 2K topcoatings, automotive basecoats, powder coatings and fiberglass.

**Application Potential:** Heavy Duty & Agriculture Equipment, Fleet Vehicles, Ships, Lifeboats, Industrial Assets...

- One-component formulation - save on labor and preparation time. Designed to
- be applied directly over two-component coatings.
- Extends in-service life of newly painted or in-servce painted surfaces.
- Enhances original color, gloss, surface hardness and UV resistance.
- High scratch resistance (4H pencil hardness).
- Extreme chemical resistance (>1500 MEK rubs).
- Extreme weathering resistance (98-100% gloss retention).




### PAINT / MATERIAL COMPATIBILITY

- Designed to be applied over basecoats, newly painted 2K epoxies, basecoats, 2K polyurethanes, powder coatings...
- Designed to be applied over sanded in-service painted 2K epoxies, 2K polyurethanes, powder coatings...

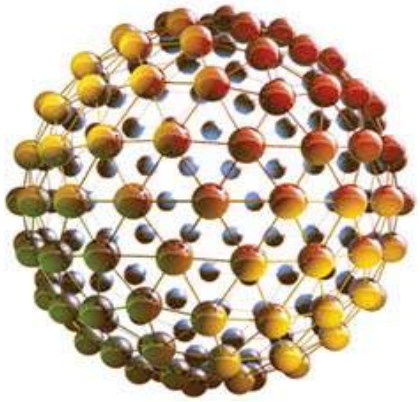
### NANO-CLEAR APPLICATION CONDITIONS

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: 4 mil
Pencil Hardness - ASTM D3363: 4H (7H w/NCIM Matte Additive)
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: 6000 hrs. no rust, no blisters
DMA – Crosslink Density - ($10^3$mol/$m^3$): 2.17
VOC (as received): 1.05 lbs. / gal.
Viscosity (Zahn 2 cup): 14.67 sec

### NANO-CLEAR 3D POLYMER

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## 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 NC 40 directly over tack-free basecoats, epoxies, polyurethanes, topcoatings & sanded powder coatings.
- Allow solvents to fully evaporate-out from the underlying paint prior to the application of Nano-Clear NC 40 (typically 3-6 hours).

**Cured Paint or In-Service Painted Surfaces:**




- Repair any structural damage (rust or chipping) using a two-component epoxy or polyurethane primer.
- Glossy painted surfaces must be cleaned, then sanded with **400 grit orbital sander**, then solvent cleaned.
- Oxidized painted surfaces must be first cleaned using **SuperClean Degreaser,** then water rinse & dry.
- Surface is ready to be spray applied using an HVLP spray gun with a 1.3 or 1.4 mm tip.

## WET-ON-WET SPRAY APPLICATION

- Apply **2** wet coats @ 2 mils per each wet coat using an HVLP spray gun (1.3 to 1.4 mm spray tip).
- Allow **2 - 3 min.** between wet coats to allow for solvent evaporation.
- Avoid recoating additional coats after 10 min. as flow and leveling will be negatively effected.
- Recommended (Wet Film Thickness WFT): 2 - 3 mil per each wet coat (4 mil wet film build total).
- Recommended (Dry Film Thickness DFT): 2.00 to 2.50 mil depending on surface properties desired.

**The number of wet coats required should be determined by the overall gloss level 3 min. after application:**

***** High gloss = Good film build
* Low Gloss = Low film build (*recommend applying another wet coat to increase gloss and improve properties*).

**Solvent Flash:** Allow 2 to 3 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.

## EQUIPMENT CLEAN-UP

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

## CURE TIME @ 72°F (22°C), 50% R.H.

| | |
|---|---|
| Dust free: | ~ 30 minutes |
| Tack free: | ~ 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: | ~ 20 minutes |
| Tack free: | ~ 40 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 NC 40 @ 1-2% by weight to reduce dust-free and tack-free time.**
*** Nano-Clear NCIM Matting Additive may be added to NC 40 @ 30-35% by weight to reduce gloss & improve abrasion.**

## SURFACE COVERAGE PER GALLON

390 ft² / gal @ 2.00 mil DFT


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## WEIGHT PER GALLON:

8.0 lbs (3.63 kg)

## PACKAGING

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

## SHIPPING WEIGHT

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 NC 45 Safety Data Sheet prior to use.

## APPLICATION EQUIPMENT

- Apply using HVLP (Iwata, Sata or DeVilbiss...)
- Conventional spray equipment
- Airless spray equipment.



## AIR SPRAY EQUIPMENT

**Recommended Spray Gun:** HVLP or LVLP (Iwata WS-400, SATAjet X 5500 or Devilbiss TEKNA®)
**Fluid Tip:** 1.3 mm to 1.4 mm
**Fan Pattern:** Full fan, when applying 2 wet coats @ 2 mil each wet coat (4 mil wet)
**Fluid Control:** 2 1/2 turns out
**Spray Pattern:** 50% overlap
**Pressure at Gun:** 29 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

## BUFFING & POLISHING (if needed)

- **Equipment:** Orbital sander and orbital polishing equipment.
- **Orbital Sand:** Use 800 grit paper, then 1000, then 1500, then 2000, then 2500 grit paper.
- **Compound:** Use heavy cut compound with wool pad @ 1,200 to 1,400 RPM.
- **Polishing:** 3M SRC (scratch resistant clears) polishing paste with wool @ 1,200 to 1,400 RPM.
- **Final High Gloss Polish:** Use light to medium cut polishing paste with wool pad @ 1,200 to 1,400 RPM.

## 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 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 20 minutes as flow and leveling will be effected.


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