

# Nano-Clear®

## Nano-Clear for Industrial Applications - TDS



### High Gloss - Nanostructured Polyurethane Hybrid Clear

Nano-Clear® is the only industrial coating in the global marketplace to enhance, restore and extend the service life of freshly painted or highly oxidized painted surfaces by 10 years. Nano-Clear provides extreme corrosion resistance, scratch, abrasion, chemical & UV resistance and reduced surface maintenance. Nano-Clear penetrates deep into the pores of highly oxidized paints and enhances color, improves gloss, increases surface hardness and extends UV resistance. Nano-Clear is a 1K humidity cured / highly cross-linked polyurethane hybrid nanocoating.

**Nano-Clear® 1K physical properties are far superior to leading 2K industrial coatings - Imron®.**

#### APPLICATION USES

High gloss topcoat over newly painted or highly oxidized paint surfaces including e-coat, epoxy, gel coat, anodized aluminum, basecoat, topcoat or primer coating systems.

**Application Potential:** Fleet vehicles, salt trucks, army & navy ships, rail cars, tank cars, locomotives, Transocean liners, bridges, painted building structures, anodized aluminum and heavy duty industrial equipment.

- One-component formulation - saving on labor and preparation time.
- High surface area coverage (1,122 sq. ft. / gal.) - saving on material costs.
- Extends in-service life of newly painted or highly oxidized painted surfaces.
- Restores original color, gloss, surface hardness and extreme UV resistance.
- High scratch resistance (4H pencil hardness).
- Extreme chemical resistance (>1500 MEK rubs).
- Extreme weathering resistance (100% gloss retention).

#### PAINT / MATERIAL COMPATIBILITY

- Can be applied over newly painted e-coat, primers, basecoat or topcoatings. It is important to test for compatibility.
- Can be applied over highly oxidized topcoatings including epoxy, gel coat, polyurethanes & powder coatings.
- Can be applied directly over new or highly oxidized fiberglass surfaces.

#### APPLICATION CONDITIONS

Temperature: 40°F to 90°F  
Relative Humidity: 20% to 80%

#### PHYSICAL PROPERTIES

Polymer Chemistry: Nanostructured Polyurethane Hybrid  
Mixing Ratio: No mixing required  
Recommended Dry Film Thickness: .50 - 1.50 mil  
Pencil Hardness - ASTM D3363: 4H  
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: 100%  
Xenon WOM - ASTM G155: 99%  
MEK Resistance - ASTM D4752: >1500  
Salt Fog - ASTM B-117: No rust, no blisters  
DMA - Crosslink Density - (X103 mol/m<sup>3</sup>): 2.17  
VOC (less exempts): 1.25 lbs. / gal.  
Viscosity: 100 cps





## APPLICATION INFORMATION

Consult MSDS 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 to 90°F
- Relative Humidity: 20% to 80%
- Metal temperature: 40°F - 90°F
- Metal temperature: At least 5 deg. above the dew point
- Material temperature: 40°F to 90°F



## SURFACE PREPARATION

### Newly Painted Surface:

- Apply directly over e-coat, primer, basecoat or topcoat systems - epoxy, polyurethane or powder coatings.

### High Gloss Surfaces:

- Sand using 1000 grit orbital sander, then solvent clean to remove debris using paint thinner.

### Oxidized Paint Surfaces:

- Surface may be sanded (not required) using 1000 grit orbital sander to remove excess oxidation.
- Surface must be thoroughly cleaned with soap and water, then dry before application.
- Remove oil, grease or wax using paint thinner, MEK or acetone.



## RECOMMENDED FILM BUILD

- Number of spray coats: 2 wet coats with 50% spray overlap between wet coats.
- Avoid recoating additional coats after 20 min. as flow and leveling will be effected.
- Recommended (WFT): 2 – 3 mil per wet coat.
- Recommended (DFT): .50 – 1.50 mil



**Solvent Flash:** Allow 5 to 10 min. between wet coats at 72°F to allow for solvent evaporation.

## THINNING

- None required as Nano-Clear has very low viscosity.

## EQUIPMENT CLEAN-UP

- Clean equipment immediately after using paint thinner, MEK or acetone. Never clean spray equipment with water or alcohol.



## CURE TIME @ 72°F, 50% R.H.

Dust free: ~ 20-30 minutes  
Tack free: ~ 30-40 minutes  
Handle: ~ 4 hours  
Dry Hard: 24 hours 72°F

- \* Lower temperatures and lower humidity conditions will slow-down the curing rate.
- \* Higher temperatures and higher humidity conditions will speed-up the curing rate.

## SURFACE COVERAGE PER GALLON

1,122 ft<sup>2</sup> / gal @ .50 mil DFT



## WEIGHT PER GALLON:

8.0 lbs.

## PACKAGING

1 gal, 5 gal, 55 gal and 275 gal

## SHIPPING WEIGHT (LBS)

1 gal container - 8

5 gal container - 40

55 gal container - 440

## SHELF LIFE & STORAGE

- Store in a dry, well-ventilated area. Storage temperatures should be between 35°F and 120°F.
- Shelf life – 12 months un-opened.
- Container must be closed immediately after use to avoid moisture contamination.
- Do not leave container open for extended periods to avoid moisture contamination. Discard contents if liquid turns white.

## SAFETY INSTRUCTIONS

Consult the Material Safety Data Sheet for this product prior to use.

## APPLICATION EQUIPMENT

- Apply using HVLP, Conventional or Airless spray equipment.
- May also be applied using a "wipe-on" application process. Lint-free microfiber applicator is recommended.



## AIR SPRAY EQUIPMENT

**Spray Gun:** HVLP or LVLP

**Fluid Tip:** 1.3 to 1.5 mm

**Fluid Line:** 3/8"

**Pressure Pot:** 15 - 20 PSI

**Pressure at Gun:** 29 - 30 PSI

## AIRLESS SPRAY EQUIPMENT

**Tip Size:** Graco 519 or 619 orifice

**Pump:** 30:1 minimum

**Pump Pressure:** 55 - 60 psi

## BUFFING & POLISHING (if needed)

- **Equipment:** Orbital sander and orbital polishing equipment.
- **Sand Paper:** 1000 grit paper, then 1500, then 2000 to 2500 grit paper.
- **Compound:** 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 Polish:** Use light to medium cut polishing past 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-gluе.
2. Avoid recoating after 20 minutes as flow and leveling will be effected.
3. Nano-Clear is a moisture sensitive system. It is important to close containers immediately after use to avoid moisture contamination.

