

TESLAN® 2000 EPOXY-CNT LOW VOC INTERMEDIATE



Product Description

TESLAN® 2000 EPOXY-CNT LOW VOC INTERMEDIATE is a solvent-based, two-component, CNT-epoxy-polyamide intermediate coating designed for application over TESLAN® 1100 ZN-CNT PRIMER, TESLAN® 1500 AL-CNT PRIMER or other products as recommended in writing by TESLA. It is designed for use in severe offshore and coastal topside environments. This product incorporates carbon nanotubes (CNTs) for enhanced durability, increased protection from impact and mechanical damage and maximum corrosion resistance. TESLAN® 2000 EPOXY-CNT LOW VOC INTERMEDIATE should be topcoated only with recommended TESLAN® topcoat products.

Recommended Uses

Use directly over TESLAN® 1100 ZN-CNT LOW VOC PRIMER or TESLAN® 1500 AL-CNT LOW VOC PRIMER. Follow with the application of recommended TESLAN® topcoat systems. Epoxy, Urethane and Polyaspartic-Hybrid based topcoat systems are available.

Typical recommended applications include:

- Drilling Rigs and Offshore Platforms
- Storage Tanks & Process Vessels
- Pipeline & Equipment

Product Characteristics (mixed)

Color:	Gray
Volume Solids:	58 ± 2% (unreduced) 55 ± 2% @ 5% reduction 52 ± 2% @ 10% reduction
Weight Solids:	73 ± 2% (unreduced)
Mix Ratio:	1.23:1 <u>by Volume</u> (Part A: Part B)
Wet Density:	11.0 lbs/gal (1.3 kg/l) (unreduced)
Dry Film Density:	13.9 lbs/gal (1.7 kg/l)
Pot Life:	2 hours @ 100°F/38°C 4 hours @ 77°F/25°C 6 hours @ 50°F/10°C
VOC:	1.6 lbs/gal (192 g/l) (unreduced) 1.6 lbs/gal (192 g/l) @ 5% reduction* 1.7 lbs/gal (204 g/l) @ 10% reduction*
Viscosity @77°F(25°C):	83 Krebs Units (unreduced)
Sweat-in-Time:	None Required

*Use only TESLAN® TYPE II LOW VOC EPOXY REDUCER.

Application Guidelines

This product is designed for application directly to properly primed steel and other metal substrates using conventional air-spray, air-assisted air, or airless spray equipment. Brush and roller application is only recommended for small areas and for stripe coating.

Recommended Film Thicknesses (unreduced)

	<u>Minimum</u>	<u>Maximum</u>
Wet mils (microns) per coat	3.0 (75)	9.0 (225)
Dry mils (microns) per coat	2.0 (50)	6.0 (150)

Theoretical Coverage (@ 2.0 mils / 50 microns dft): 467 ft²/gal
(11.7 m²/l)

If reduced more than 5%, do not exceed 9.0 mils / 225 microns wet film thickness or 6.0 mils / 150 microns dry film thickness in a single coat.

Drying Schedule @ 9.0 mils (225 microns) wet film thickness

	<u>@50°F(10°C)**</u>	<u>@77°F(25°C)**</u>	<u>@100°F(38°C)**</u>
To Touch:	12 hours	3 hours	2 hours
To Handle:	72 hours	24 hours	8 hours
To Full Cure:	10 days	7 days	7 days

To Recoat w/ TESLAN® Epoxy System:

Minimum:	20 hours	4 hours	3 hours
Maximum:	6 months	6 months	6 months

To Recoat w/ TESLAN® Urethane or Polyaspartic-Hybrid System:

Minimum:	48 hours	24 hours	16 hours
Maximum:	6 months	6 months	6 months

**At 50% Relative Humidity (RH)

Drying time is temperature, humidity, and film thickness dependent. If maximum recoat time is exceeded, abrade surface in accordance with SSPC SP 7 (NACE No. 4) or other TESLA approved method before recoating. Remove any residues from abrading process.

Temperature (Air, Surface, Material) / Humidity Requirements

Minimum: 50°F (10°C), 40% RH Maximum: 100°F (38°C), 90% RH

The surface should be dry and at least 5°F (3°C) above the dew point.

Surface Preparation

For new or bare abrasive blasted metal surfaces: Prepare substrate and apply TESLAN® 1100 ZN-CNT PRIMER or TESLAN® 1500 AL-CNT LOW VOC PRIMER. Carefully follow all recommended surface preparation, application guidelines, and recoat schedules for the primer. Primed surface must be clean, dry and in sound condition.

For application over an existing coating other than those listed above: Contact Tesla Nanocoatings Technical Service for recommendation.

Mixing Procedures & Thinning Recommendations

DO NOT MIX PARTIAL KITS. Use an air-driven power mixer and keep material under agitation (as needed to prevent settling or separation) while applying this product. Slowly mix 1-part Component A with 1-part Component B by volume. Adjust mixer speed as needed to thoroughly blend the two components. Part A is a thixotropic material and it may have a semi-solid appearance prior to mixing. It will become fluid upon agitation and after mixing with Part B. Strain mixed material through a 35 to 60 mesh (310 to 681 microns) screen prior to use. For extended spray application sessions, keep under low RPM agitation to prevent settling. For limited brush and roller applications, stir mixed material occasionally to prevent settling.

Do not use mixed material beyond pot life limits.

Do not mix previous catalyzed material with freshly prepared material.

If needed, thin material up to 10% by volume using only TESLAN® TYPE II LOW VOC EPOXY REDUCER.

Product Application & Equipment Recommendations

For optimum protection, stripe coat all crevices, welds, and sharp angles by brush application. Use a medium bristle brush and avoid rebrushing.

Airless Spray

Pressure:	1500-2400 psi (103-166 bar)
Hose:	1/4 or 3/8 inches (6.4 or 9.5 mm)
Tip:	0.009-0.015 inches (225-375 microns)
Filter:	60 mesh (250 microns)
Reduction:	As needed up to 10% by volume
Equipment:	Graco or similar

Conventional Air-Spray

Pressure:	40-50 psi (2.8-3.4 bar)
Hose:	3/8 inches (9.5 mm)
Tip:	E
Filter:	60 mesh (250 microns)
Reduction:	As needed up to 10% by volume
Equipment:	Graco or similar

Cleanup

Immediately clean and flush all equipment with TESLAN® Epoxy Reducers or other solvents compatible with solvent based epoxy coatings (MEK, xylene, etc.)

Recommended Primer Systems

TESLAN® 1100 ZN-CNT EPOXY LOW VOC PRIMER

--or--

TESLAN® 1500 AL-CNT EPOXY LOW VOC PRIMER

Recommended Topcoat Systems**For Moderate UV/ Weathering resistance**

TESLAN® 3000 EPOXY LOW VOC TOPCOAT

For Maximum UV/ Weathering resistance

TESLAN® 4000 URETHANE LOW VOC TOPCOAT

--or--

TESLAN® 5000 POLYASPARTIC-HYBRID LOW VOC TOPCOAT

Recommended Thinners/Reducers

TESLAN® TYPE II LOW VOC EPOXY REDUCER

[VOC content: 2.4 lbs/gal (288 g/l)]

Safety/Storage/Disposal

Refer to Material Safety Data sheets (MSDS) before use.

Shelf Life (Part A and B): 24 months, unopened (when stored under recommended conditions). Store in dry, shaded conditions at 40°F (5°C) to 100°F (38°C).

Dispose of unused material following all laws and regulations.

Contact Information**For technical assistance:**

Email: technicalsupport@teslanano.com
Tel: +1-330-685-0599
Fax: +1-330-305-6611
Web: www.teslanano.com

For sales assistance:

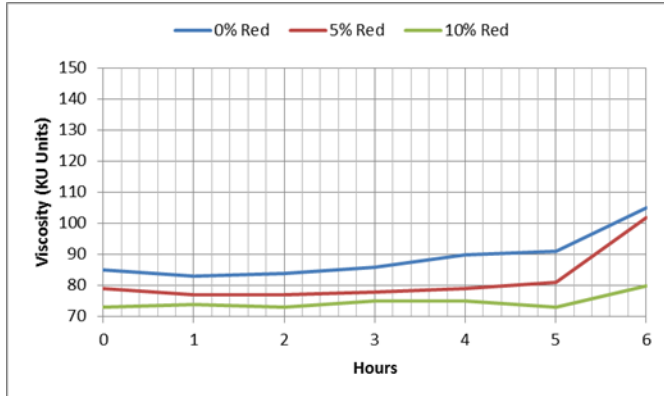
Email: sales@teslanano.com
Tel: +1-330-417-3550
Fax: +1-330-305-6630
Web: www.teslanano.com

Disclaimer and Warranty

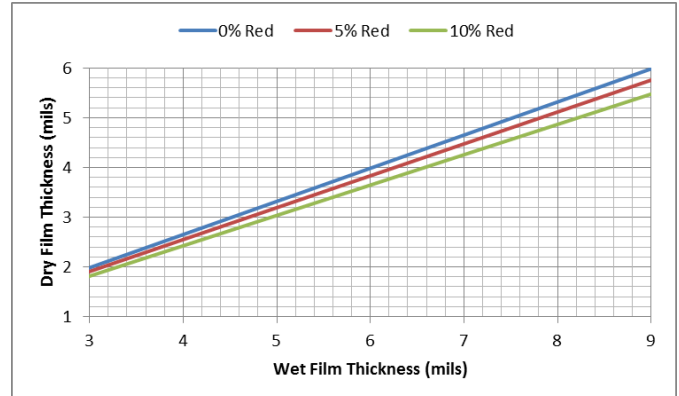
Tesla Nanocoatings Inc warrants only that its coatings represented herein meet the formulation standards of Tesla Nanocoatings Inc. Technical and application information herein is provided for the purpose of providing general properties of the coating and recommended coating application procedures. As application and environmental factors can vary significantly, due care should be exercised in the selection and use of this and any coating system.

Additional Information

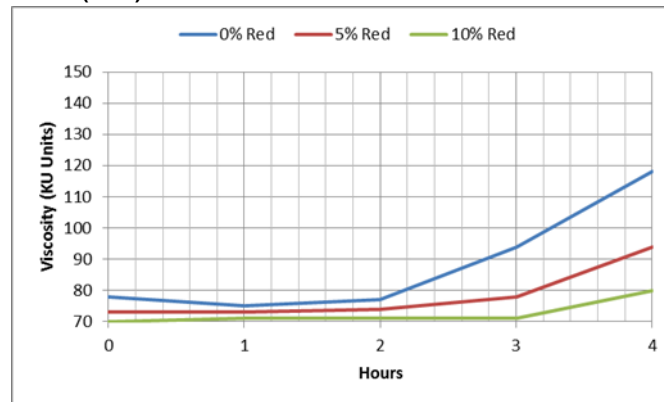
Viscosity (with 0%, 5%, 10% reduction) vs. Time After Catalyzing at 50°F (10°C).



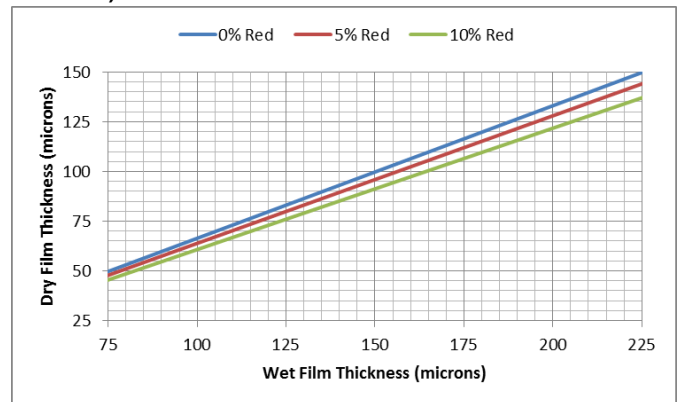
Wet Film Thickness vs. Dry Film Thickness (with 0%, 5%, 10% reduction) in mils.



Viscosity (with 0%, 5%, 10% reduction) vs. Time After Catalyzing at 77°F (25°C).



Wet Film Thickness vs. Dry Film Thickness (with 0%, 5%, 10% reduction) in microns.



Viscosity (0%, 5%, 10% reduction) vs. Time After Catalyzing at 100°F (38°C).

