

# 74-NS Series ChemTemp

## Hybrid Epoxy Novolac "Non-Stick" DTM Coating



ChemTemp 74-NS Series is a thin film 2-K Hybrid Epoxy Novolac Coating that offers exceptional temperature, chemical, and abrasion protection. In addition, its "non-stick" properties make it a great choice for services where foreign matter build-up is a challenge or where graffiti needs to be mitigated. 74-NS Series provides a finished film that is "phobic" to most contaminants, making them crawl or scatter from the film. ChemTemp 74-NS Series also offers excellent adhesion and corrosion resistance with a top temperature rating of 450°F for dry heat, making it the premium choice for high performance against aggressive environments.

### Tech Specs

<b>Heat Resistance:</b>	350°F for immersion services 450°F for dry heat services	<b>VOC:</b>	<247 g/L
<b>Vehicle Type:</b>	Hybrid Epoxy Novolac	<b>Flash Point:</b>	24°F (Lowest Flashing Component)
<b>Reducer:</b>	Not Normally Required	<b>Dry Film Thickness:</b>	4-8 mils DFT in a single coat
If desired:	#740S (slow) #740M (medium) #740F (Fast)	<b>Wet Film Thickness:</b>	5.7-11.4 mils WFT in a single coat
<b>Mix Ratio:</b>	4:1 Base to Activator	<b>Dry-time:</b>	<b>Normal</b>
Base:	74-NS-####	To Touch:	4 Hours
Activator:	74-AHF-100	To Recoat:	**1 Coat only – do not recoat**
<b>Pot Life:</b>	3 Hours @ 77°F (Decreases in higher temperatures)	Full Cure:	7 Days or 24 Hours after final coat when force cured
<b>Volume Solids:</b>	70%	<b>Shelf Life:</b>	2 Years Minimum
<b>Theoretical Coverage:</b>	1122ft <sup>2</sup> /gal. @ 1 mil DFT	<b>Finish:</b>	Eggshell
		<b>Color:</b>	Standard and Custom
		<b>Packaging:</b>	5 Gallon & 1 Gallon Kits
		<b>Storage Temperature:</b>	20°F - 110°F

### Surface Preparation

All surfaces should be clean, dry and free of all foreign contaminants.  
A SSPC-SP1 Solvent Cleaning with Highland 901 Cleaning Solvent is recommended before blasting or other cleaning method.

#### Carbon Steel - Immersion:

Obtain a 2-3 mil angular blast profile using one of the recommended methods below.

**Best:** A SSPC-SP5/NACE 1 White Metal Blast Cleaning is recommended for maximum coating performance and longevity.

**Good:** A SSPC-SP10/NACE 2 Near White Metal Blast Cleaning provides good results.

#### Carbon Steel - Non-Immersion:

Obtain a 2-3 mil angular blast profile using one of the recommended methods below.

**Best:** A SSPC-SP10/NACE 2 Near White Metal Blast Cleaning is recommended for maximum coating performance and longevity.

**Good:** A SSPC-SP6/NACE 3 Commercial Blast Cleaning provides good results.

#### Galvanized Steel:

Contact a Highland representative as recommendation will vary depending on substrate and exposure conditions.

**Note:** Allow one week at 77°F before being put into service (unless force cured). The second coat/topcoat must be applied within 36 hours at 77°F or the surface will need to be scuffed.

## Mixing & Application

**Mixing:** Highland 74-NS Series needs to be thoroughly mixed using mechanical agitation. Mix entire contents of Part "A" Activator (74-AHF-100) with Part "B" Base (74-NS-####) (4:1 by volume) Product is ready to spray after proper mixing and a 30 minute induction period.

**Reduction:** Reduction is not required, if desired, reduce by 0% - 10% with Highland #740 reducer.

Highland 74-NS Series is designed for spray application. To ensure optimal performance, apply according to recommendations below.

**Airless Gun:** Graco 205-591  
**Pump:** 30:1/45:1/60:1  
**Tip Range:** 3.013 – 4.017  
**Pump Pressure:** 1,800 psi Minimum  
**Hose:** 3/8 inch ID

**Brush or Roller:** Both are acceptable for touch up.

**Conventional Gun:** DeVilbiss MBC-510  
**Fluid Tip:** E  
**Air Cap:** 704  
**Atomizing Pressure:** 70 psi  
**Pot Pressure:** 15-20 psi  
**Hose:** 1/2 inch

**Clean Up:** Highland #901 Cleaning Solvent

### Special Notes for Hot Applications

- Chem-Temp 74-NS Hot Application formula may be applied directly to hot surfaces not exceeding 400°F.
- Mix 1 Part "A" Activator (74-AHF-100) with 4 Parts "B" Base 74-NS-#### (4 to 1 by volume).
- Mixed material is ready for reduction after a 30 minute induction period.
- Reduce 20% with Highland #101A Hot Application Reducer.
- To achieve the recommended film thickness, apply in multiple subsequent coats not exceeding 2 mils DFT per coat

## Typical Systems

**Direct to Metal:** Apply 4-8 mils DFT of 74-NS Series in a single coat directly to prepared steel.

**Primer/Topcoat:** Apply 4-8 mils DFT of 74-HF Series as a primer in a single coat.  
Apply 4-8 mils DFT of 74-NS Series as a topcoat in a single coat.

## Advantages

- Next generation polymer technology specifically engineered for heat stability and chemical resistance
- Dry heat stability up to 450°F, immersion up to 300°F (350°F for some cargoes/services)
- Non-Stick Film, used for anti-graffiti purposed or to reduce build-up of foreign matter on film
- Superior resistance to a wide variety of chemicals and solvents
- Superior adhesion even over marginally prepared surfaces
- Excellent corrosion resistance
- Ease of application
- Specially engineered inert filler package provides superior barrier properties
- Superior substrate wetting provides excellent adhesion and corrosion protection
- Ultra-high crosslink density provides a tough durable film with long lasting protection

## Performance Data

<b>Adhesion</b> (ASTM D 4541) – Commercial Blast	> 1800 psi	<b>Chemical Resistance</b> (ASTM D 1308)	Excellent – MEK – No defects observed 25% H <sub>2</sub> SO <sub>4</sub> – Slight discoloration, no other defects observed 25% NaOH – slight loss of gloss, no other defects observed
<b>Abrasion Resistance</b> (ASTM D 4060) 1000 Cycles, 1000g load	Excellent – 124 mg loss	<b>Pencil Hardness</b> (ASTM D 3363)	6H
<b>Humidity Resistance</b> (ASTM 4585) 3000 hours	Excellent – No blistering or other defects observed	<b>Elongation</b> (ASTM D 522)	5%
<b>Salt Spray Resistance</b> (ASTM B 117) 3000 hours	Excellent - <1 mm creep from scribe, no blistering		

## Test Data

### Acid Condensation Bath

<b>Method:</b>	Coated panels exposed to a condensation bath with 50% sulfuric acid and water. The test duration was 1000 hours total at 177°C (350°F) and the panels were scribed with an "X" to evaluate corrosion. The acid bath was performed in an enclosed apparatus that retained the sulfuric acid condensation, and the panels were suspended in the headspace.
<b>System:</b>	Single coat of 74-NS Series @ 8 mils DFT applied to SSPC-SP6 Commercial Blast prepared steel. Cured 24 hours at 21°C (70°F).
<b>Result:</b>	No rust creepage, softening, cracking or Delamination of the film after 1000 hours of continuous exposure.

## Safety Information

- Use normal precautions such as gloves, facemasks and barrier creams.
- Adequate ventilation must be maintained. In confined areas, applicators must wear constant flow airline respirators.
- If product comes into contact with skin, wash thoroughly with lukewarm water or diluted Boric Acid, and obtain immediate medical attention.
- This product contains FLAMMABLE materials. Keep away from sparks and open flames. Observe NO SMOKING regulations.
- All electrical equipment and installations should conform to NEC regulations. In areas where explosion hazards exist, applicators should be required to use nonferrous tools, and to wear conductive, non sparking shoes.
- Observe low flash regulations.
- Refer to Safety Data Sheet (SDS) for complete safety instruction