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# POLYMER NATION CHEMICAL COMPANY, LLC

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## TECHNICAL DATA SHEET: P-21 CLEAR POLYUREA BASECOAT/PRIMER

### Product Overview

P-21 is a two-component clear polyurea coating for use as a primer on concrete and as a basecoat for broadcast aggregates and flake. It is the perfect choice for priming concrete that has been exposed to oils, or when quick turn-around time is required. It comes in standard speed with the option of an accelerator to achieve faster cure or if applying in colder temperatures.

### Uses and Benefits

P-21 is most often used as a clear basecoat, with added color packs, for flake systems or as a concrete primer. It has excellent adhesion properties and can be used as a primer for tinted Polymer Nation finish coats.

### Limitations

P-21 is designed to be applied between 8-10 mils. It is not intended as a finish coat as it will amber; likewise, when used as a primer/basecoat in **outdoor** applications, P-21 will amber, even in flake systems. Ideal application temperatures to be between 50-90 degrees Fahrenheit. Cooler temperatures will increase cure times (see Accelerator below). Warmer temperatures will decrease working and cure times. Verify that substrate temperature is above 5 degrees of dewpoint during application and cure of material to avoid any potential condensation.

### Surface Preparation

The preparation method for each project is determined by a full understanding of the substrate to be coated, the chemistry of the coating system being used, the coating system thickness, and numerous other factors. The coating installer should fully read and understand ICRI Guideline NO. 310.2R-2013 and OSHA 29 CFR 1926.1153 before starting preparatory work. The aim, of preparing a substrate for coating applications, is to roughen the surface, remove weak layers, contaminants, dirt, debris and present a solid, clean, dry substrate for the primer. If unsure as to the level of preparation needed contact Polymer Nation at [Lab@polymerNation.com](mailto:Lab@polymerNation.com).

### Mixing

It is always recommended to mix the entire kit, whenever possible, to avoid off-ratio mixtures. Mix ratio is 2 parts P-21 Part A to 1 part P-21 Part B. Combine all of Part A and B into a single container, large enough to except the entire kit. Mix using a 350 RPM mixer using an appropriate mixing blade for 1.5 – 2.5 minutes making sure to not introduce excessive air into the material.

### Application

Pour entire content of mixed material onto the floor in ribbons. Spread material using a flat blade or notched

squeegee. Back roll material using a 3/8" nap roller cover to maintain an even mil thickness of material. Material can also be bucket rolled on smaller projects. Recoat within 2-24 hours. Clean tools with a solvent similar to Xylene or Acetone.

### Technical Data

The data below was gathered at temperatures of 72-75°F and 30-50% RH

Packaging	3 Gallon kits
Mix Ratio by Volume	2:1
Mixed Viscosity	400-600 cP 25°C/77°F
Gel Time	25 min/13 min (C-55)
Dry to Touch	2 hours
Through Dry	3-4 hours
Dry to Walk	4-6 hours/1.5-2 hours (C-55)
Dry to Light Use	6-8 hours
Full Cure	5 days
Shore D Hardness	D65 @ 24 hours
Shore D Hardness	D78 @ 7 days
Gloss @ 60 Degree Angle	60-70
VOC's of Mixed Material	<50 g/l EPA Method 24
Color Scale	0.5-1.0 per ASTM D1500
Solids by Volume Mixed	100%
Application in Mils	8-10 (160 – 200 sq.ft./gal)
Available Colors	Clear and Color Packs

### Accelerator

C-55 may be used to accelerate the cure of P-21; especially in cooler temperatures. Thoroughly mix the entire content of the C-55 into Part A of P-21 before adding Part B; it is storage stable only in Part A of P-21. Do not mix into Part B. Use of C-55 is recommended for applications where the substrate and/or ambient air temperature is between 45-65 F. The pot life and working time will be reduced when using C-55 (see Technical Data).

## PHYSICAL PROPERTIES

### P-21 CLEAR POLYUREA BASECOAT/PRIMER

Description	Standard	Results
Tensile Strength	ASTM C307	3,270 psi
Moisture Absorption	ASTM C413	<.2 weight increase
Coefficient of Thermal Lineal Expansion	ASTM C531	15-17 x 10-6 27-30 x 10-6
Compressive Strength	ASTM C579	12,500 psi
Modulus of Elasticity	ASTM C580	N/A
Flexural Strength	ASTM C580	5,550 psi
Water Vapor Transmission	ASTM D1653	See ASTM D3010
Impact Resistance	ASTM D2794	>160 inch pounds
Independent Certificate from third party testing agency	ASTM D3010	N/A
Adhesion	ASTM D3359	5A
Abrasion Resistance CS17 1000 g 1000cycles in g Loss	ASTM D4060	0.022g Loss (when higher abrasion resistance is required the addition of PC 1336 to the coating should be included)
Adhesion to Steel	ASTM D4541	>1,000 psi
Hiding Power	ASTM D5150	2-5/175 When pigmented
Flammability When Adhered to Concrete	ASTM D635	Self-Extinguishing
Adhesion to Concrete	ASTM D7234	>450 Substrate failure
Coefficient of Friction Dry Ave. three tests	NFSI B101.0	0.75
Coefficient of Friction Wet Ave. three tests	NFSI B101.1	0.7
Accelerated Weathering Testing	ASTM G154	Moderate yellowing

\* Dispose of material, containers, solvents, etc., per Federal, State and local guidelines, rules and laws.

\* Store material between 60-80 degrees F in a protected dry location.

Test data has been gathered from testing conducted by independent, internal and third-party testing. The best way to compare coating performance is by head-to-head independent testing as this removes the numerous variables found between testing standards, equipment and testing agencies.

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