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# POLYMER NATION CHEMICAL COMPANY, LLC

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## TECHNICAL DATA SHEET: U-21 2K WB GLOSS URETHANE ACRYLIC HYBRID

### Product Overview

U-21 is a breakthrough technology combining urethane and acrylic characteristics to create a unique, zero-VOC water-based topcoat. By combining our hybrid urethane/acrylic resin with our proprietary aliphatic hardener blend we are able to create a high-solids, clear finish that will not yellow, maintains its existing sheen and passes 2500 MEK double rubs! It is manufactured in a gloss finish only. If a *satin* finish is desired, see the tech data sheet for U-31 2K WB Satin Urethane.

### Uses and Benefits

U-21 is primarily used as a clear topcoat due to its unsurpassed UV, stain, mar and abrasion resistance. It can be applied to floors and walls and adheres well to many substrates including concrete, gypsum, cement board, metals, vinyl, PVC and fiberglass. It can also be applied direct to concrete as a primer and topcoat.

### Limitations

U-21 is designed to be applied at 4-6 mils as a top coat on floors and walls. Allowing to puddle will have a negative effect on the finish. Ideal application temperatures to be between 60-90°F. Cooler temperatures will increase cure times. Warmer temperatures will decrease working and cure times. Higher RH will lengthen dry time. Verify that substrate temperature is 5 degrees above the dewpoint during application and cure of material to avoid a potential blush or 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).

### Application

Combine all of part A and B into a single container, large enough to accept the entire kit. Mix at 350 RPM for 2-3 minutes using an appropriate mixing blade and making sure not to introduce excessive air into the solution (IF NEEDED, material can be thinned up to 10% with clean potable water). Pour material needed from the container onto the floor and spread with a 5-7 mil squeegee. Back roll perpendicular to evenly spread the material. Strike off the material in the same direction as material was squeegeed. Material can also be bucket-rolled using a 3/8" nap roller cover. For a non-skid finish add 288 grams per 3 gallon kit of PN 1337 S (1-12 oz cup struck off at the top) or 4 lbs. of PN 1335 AO and stir to

completely incorporate. Recoat within 24 hours. Clean tools with a hot soapy water or solvent similar to Denatured Alcohol or Acetone.

### Technical Data

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

Packaging	2, 4, and 20 Gallon kits
Mix Ratio by Volume	3:1 A:B
Mixed Viscosity	250-500 cP 25°C/77°F
Work Time	10-15 minutes
Dry to Touch	2-4 hours
Through Dry	6-10 hours
Dry to Walk	12-16 hours
Dry to Light Use	24 hours
Full Cure	7 days
Pendulum Hardness (König)	12 @ 24 hours
Pendulum Hardness (König)	46 @ 7 days
Gloss @ 60 Degree Angle	>90
VOC's of Mixed Material	0 g/l EPA Method 24
Color Scale	0.5-1.0 per ASTM D1500
Solids by Volume Mixed	53 %
Application in Mils	4-6 (275-400 sq.ft./gal.)
Available Colors	Clear and Color Packs ( <b>PN 1342 WB color packs ONLY!</b> )

## PHYSICAL PROPERTIES

### U-21 2K WB GLOSS URETHANE ACRYLIC HYBRID

Description	Standard	Results
Tensile Strength	ASTM C307	2,380 psi
Moisture Absorption	ASTM C413	<.17 weight increase
Coefficient of Thermal Lineal Expansion	ASTM C531	N/A
Compressive Strength	ASTM C579	N/A
Modulus of Elasticity	ASTM C580	N/A
Flexural Strength	ASTM C580	3,550 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 1000 cycles in g Loss	ASTM D4060	0.014 g 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	N/A
Flammability When Adhered to Concrete	ASTM D635	Self-Extinguishing
Adhesion to Concrete	ASTM D7234	>450 psi Substrate failure
Coefficient of Friction Dry Ave. three tests	NFSI B101.0	0.72
Coefficient of Friction Wet Ave. three tests	NFSI B101.1	0.67
Accelerated Weathering Testing	ASTM G154	Non-yellowing

\* Dispose of material, containers, solvents, etc., per Federal, State and local guideline, 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.

The information here is general information to help our customers determine whether our products suit their specific applications. Our products are intended for sale to commercial and industrial customers. **We require that customers inspect and test our products before use to satisfy themselves as to the content and suitability for the applications they intend to use our products.** Nothing herein shall constitute any warranty expressed or implied, including any warranty of merchantability or fitness for a particular purpose, nor is any protection from any law or patent to be inferred. The exclusive remedy for all proven claims is the replacement of our materials, and we shall not be liable for incidental or consequential damages. Polymer Nation Chemical Company LLC, 405 Oakwood Ave. Waukegan, IL 60085. All rights reserved.