Polymer Nation Chemical Company, LLC
405 Oakwood Ave, Waukegan, IL 60085 | (847)774-5038
polymernation.com | sales@polymernation.com

URETHANES

U-21

TECHNICAL DATA SHEET

COMPONENTS	SOLIDS	VOC	MIX RATIO
2	53 %	0 g/l	3:1 A:B

DESCRIPTION

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.

RECOMMENDED USES

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.

MIXING

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).

APPLICATION

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.

COMPONENTS

Part A

Part B

GENERAL PRODUCT INFORMATION

Chemistry	Urethanes
Color / Finish	Gloss · Clear and Color Packs
Number of Components	2
Solids by Volume	53 %
VOC (Mixed)	0 g/l
Mix Ratio	3:1 A:B
Mixed Viscosity	250-500 cP 25°C/77°F
Gel / Working Time	10-15 minutes
Gel Time	OMIT THIS FIELD ENTIRELY — write no value (or hold it out of the publish until the lab confirms it)
Application Temperature	60-90°F
Odor	None — keep, but disposition it together with gel_time rather than separately

It is always preferred to mix the entire kit, whenever possible, to avoid off-ratio mixtures

Warmer temperatures will reduce viscosity and lower temperatures will increase viscosity

Verify that substrate temperature is 5 degrees above the dewpoint during application and cure of material to avoid a potential blush or condensation.

PHYSICAL PROPERTIES

Hardness	12 @ 24 hours / 46 @ 7 days	Pendulum Hardness (König)
Tensile Strength	2,380 psi	ASTM C307
Compressive Strength	N/A	ASTM C579
Flexural Strength	3,550 psi	ASTM C580
Abrasion — Taber CS-17	0.014 g Loss (when higher abrasion resistance is required the addition of PC 1336 to the coating should be included)	ASTM D4060
Impact Resistance	>160 inch pounds	ASTM D2794
Adhesion to Concrete	>450 psi Substrate failure (note: ASTM D7234) — KEEP AS-IS, no change required	ASTM D7234
Gloss @ 60°	>90	
Color Scale	0.5-1.0	ASTM D1500
Accelerated Weathering	Non-yellowing	ASTM G154
Moisture Absorption	<.17 weight increase	ASTM C413
Coefficient of Thermal Lineal Expansion	N/A	ASTM C531
Water Vapor Transmission	See ASTM D3010	ASTM D1653
Independent Certificate — Third-Party Testing	N/A	ASTM D3010
Adhesion	5A	ASTM D3359
Adhesion to Steel	>1,000 psi	ASTM D4541
Hiding Power	N/A	ASTM D5150
Flammability When Adhered to Concrete	Self-Extinguishing	ASTM D635
Coefficient of Friction — Dry	0.72	NFSI B101.0
Coefficient of Friction — Wet	0.67	NFSI B101.1

CURE SCHEDULE

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

COVERAGE & PACKAGING

Coverage Rate	275-400 sq.ft./gal.
Application Thickness	4-6 mils
Recoat Window	Within 24 hours
Packaging	2, 4, and 20 Gallon kits

STORAGE, HANDLING & SAFETY

Store at 60-80 degrees F. Store material between 60-80 degrees F in a protected dry location. Refer to the current Safety Data Sheet (SDS) for this product before handling, mixing, or applying. Use appropriate personal protective equipment and ensure adequate ventilation during application and cure. Dispose of material, containers, solvents, etc., per Federal, State and local guideline, rules and laws

TEST DATA

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.

TYPICAL VALUES

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.