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# POLYMER NATION CHEMICAL COMPANY, LLC

*Setting the Standard*

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## TECHNICAL DATA SHEET: U-45 1K ACRYLIC SEALER

### Product Overview

U-45 is a non-yellowing, one-component, solvent-based acrylic sealer with excellent wear and abrasion resistance properties. It provides excellent protection against moisture penetration. It is applied directly to concrete or cementitious surfaces. Because it is fast drying characteristics, multiple coats can be applied in a short amount of time.

### Uses and Benefits

U-45 is primarily used as a clear sealer over concrete or cementitious surfaces due to its excellent wear and abrasion resistance. It is reduced in the field with xylene to achieve application viscosity; this is usually done at a ratio of 1:1 by volume. A minimum of 2-3 coats is recommended for complete sealing of the substrate.

### Limitations

U-45 is designed to be applied between 500-800 sq ft/gal. Ideal application temperatures to be between 60-90°F. Cooler temperatures will increase cure times. Warmer temperatures will decrease working and cure times. Solvents with low flash points (i.e., acetone) are not recommended to use as a reducing agent due to rapid evaporation rates; this can be problematic for both application and finish properties. It is best to apply during cooler time of the day to avoid bubbles forming from trapped solvent. Verify that substrate temperature is 5 degrees above the dewpoint during application and cure of material to avoid 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.03732 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 U-45 and xylene at a 1:1 ratio by volume to reduce U-45 to application viscosity. Mix at low to medium speed for 1-2 minutes using an appropriate mixing blade and making sure not to introduce excessive air into the solution. If the viscosity is still too thick, add another 5-10% xylene to further reduce the solution viscosity.

### Application

Pour material needed from the container into a paint tray and saturate a 1/4" nap roller with material. Roll onto the floor and spread at approximately 500-800 sq ft/gal. Back roll perpendicular to evenly spread the material. Strike off the material in the same direction as material was rolled. Material can also be bucket-rolled using a 1/4" nap roller cover. Recoat as soon as first coat is dry to touch (usually <30 minutes). Clean tools with a solvent similar to Xylene or Acetone. Be sure to tighten lid on the bucket of any material not used to avoid solvent evaporation.

### Technical Data

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

| | |
|---|---|
| Packaging | 5 Gallon kits |
| Mix Ratio by Volume | N/A |
| Mixed Viscosity | 3,000-6,000 cP 25°C/77°F (before reducing) |
| Working Time | N/A |
| Dry to Touch | <30 minutes |
| Through Dry | 30-60 minutes |
| Dry to Walk | 1.5 hours |
| Dry to Light Use | 2-4 hours |
| Full Cure | 3-5 days |
| Pendulum Hardness (König) | 55 @ 24 hours |
| Pendulum Hardness (König) | 110 @ 7 days |
| Gloss @ 60 Degree Angle | >90 |
| VOC's of Mixed Material (calculated) | 430 g/L (before reducing) |
| Color Scale | 0.5-1.0 per ASTM D1500 |
| Solids by Volume Mixed | 50% (before reducing) |
| Application in Mils | 2-3 (500-800 sq.ft./gal.) |
| Available Colors | Clear |

# PHYSICAL PROPERTIES
# U-45 1K ACRYLIC SEALER

| 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 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 | 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.

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