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POLYMER NATION CHEMICAL COMPANY, LLC

Setting the Standard



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TECHNICAL DATA SHEET: P-99 MVS

Product Overview

P-99 is a state of the art, Bisphenol F epoxy, Moisture Vapor Suppression (MVS) coating. As a Bis F, it has higher functionality than Bis A epoxies, providing better chemical resistance to caustics and acids. This is critical when combating high alkalinity at the concrete/coating interface. P-99, when properly installed, creates a tight film that tenaciously bonds to concrete. This highly crosslinked film reduces the amount of moisture vapor that can pass from the concrete through the P-99. Independent testing, performed by CTL Labs, shows ASTM E96 test results of .074 grains per hour, per square feet, per 1 inch of mercury. This extremely low perm rating results in P-99 being classified as a Class 1 vapor retarder. P-99 comes in standard and fast set versions. Ask your P-99 supplier for the CTL test results and always demand third party testing when comparing MVS product performance between manufactures!

Uses and Benefits

Primer-Used when concrete testing, per ASTM F2170, shows average RH readings above 75% or when moisture vapor emissions are suspected, and an additional level of moisture transmission protection is desired. When applied seamlessly at 16 mils over a concrete surface profile (CSP) of 2 or 3, P-99 will mitigate moisture vapor transmission (MVT) to less than .1 perms as shown in independent testing. Independent testing shows that broadcasting flake into P-99 results in a Class 2 Vapor retarder or > .1 and </=1. **Chemical Resistant Build and Topcoat**-Used when a high build epoxy with a broad degree of chemical resistance is needed such as in battery charging stations, laboratories and chemical splash and spill locations.

Limitations

Verify that substrate temperature is above 5 degrees of dewpoint during application and cure of material to avoid a potential amine blush. Follow Technical Data below.

Surface Preparation

For guaranteed performance follow all steps found in ASTM F3010. Patch all holes, cracks and non-moving joints using SP-15 prior to coating application. Understanding of osmotic, capillary and hydrostatic pressures with the potential of alkaline hydrolysis (which can erode the bond strength) is critical to successful evaluation, preparation and installation. Osmotic, capillary and hydrostatic pressures have been measured in excess of 3,000 p.s.i. which is well above the tensile strength of concrete. Polymer Nation encourages its customers to review its presentation called Understanding Moisture Vapor Suppression available where P-99 is sold. To receive a MVS warranty contact Polymer Nation techservice@polymernation.com prior to the start of project. Only written warranties will be honored for labor and material coverage.

Mixing

Do not split kits. Mix ratio is 2 parts P-99 Part A to 1 part P-99 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. If adding colorant, first mix with Part A before adding Part B.

Application

Pour the entire content from the container onto the floor and follow normal squeegee and back roll or cut and roller techniques. P-99 can be applied in one coat at 16 mils when concrete and environmental conditions allow. If concrete is

porous and/or environmental conditions unfavorable a two-coat process is recommended with the first coat placed at 8 mils and the second coat placed at 8 mils for a total thickness of 16 mils. Successful material performance requires a monolithic, pinhole-free finish. Achieving this finish is dependent on the substrate condition and the installer's skill level. Recoat within 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 gal A, 1 gal B
Mixed Viscosity	700-1000 cP 25°C/77°F
Working Time	15-20 minutes
Dry to Touch	4-6 hours (2-3 if fast set)
Through Dry	6-10 hours (3-6 is fast set)
Dry to Light Use	16 - 24 hours (8-12 if fast set)
Full Cure	7 days
Shore D Hardness	D65 @ 24 hours
Shore D Hardness	D78 @ 7 days
Gloss @ 60 Degree Angle	80-90
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	16 mils or 2 coats of 8 mils
Available Colors	Clear or color packs

PHYSICAL PROPERTIES – P-99 MVS

Description	Standard	Results
Tensile Strength	ASTM C307	7,870 psi
Moisture Absorption	ASTM C413	<0.2% weight increase
Coefficient of Thermal Lineal Expansion	ASTM C531	15-17 x 10 ⁻⁶ 27-30 x 10 ⁻⁶
Compressive Strength	ASTM C579	13,000 psi
Modulus of Elasticity	ASTM C580	N/A
Flexural Strength	ASTM C580	5,550 psi
Water Vapor Transmission	ASTM E96	< 0.1 perms
Impact Resistance	ASTM D2794	>160 inch pounds
Perm Rating - Independent Certificate from third party testing	ASTM F3010	Yes 0.074 perms
Adhesion	ASTM D3359	5A
Abrasion Resistance CS17 1000 g 1000 cycles in g Loss	ASTM D4060	0.049g 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	2-5/200
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	N/A

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.

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

* Store material between 60-85 degrees F in a protected dry location.

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.