Polymer Nation – PolyGuard 111 ESD

Technical Data Sheets

Primer: P-01 Primer (Pigmented)

Base: SP-33 ESD Epoxy (Pigmented)

Wear: SP-33 ESD Epoxy (Pigmented)

Made in the USA with domestic and imported ingredients.

POLYMER NATION CHEMICAL COMPANY, LLC

Setting the Standard

Florida (239) 424-8692 | info@floorcoatingsource.com

405 Oakwood Ave
Waukegan, IL 60085

TECHNICAL DATA SHEET: P-01 CLEAR EPOXY FLOOR PRIMER

Product Overview

P-01 is a workhorse, clear, 100% solids epoxy primer. Formulated at a **3:1** mix ratio, it presents an economic advantage over standard 2:1 epoxy primers. It can be used with our full line of colorants (PN 1339) to provide extreme color flexibility. Ease of use, good flow and leveling, toughness and flexibility are characteristics of this high quality epoxy. The cured material has good, broad-range, chemical resistance as well as good abrasion and impact resistance.

Uses and Benefits

P-01 is most often used as a primer and broadcast resin for resinous concrete flooring projects. It can also be used as a patching or trowel material when combined with PN 1170 or PN 1324 aggregate.

Limitations

P-01 is designed to be applied between 8-12 mils. Ideal application temperatures to be between 60 – 85°F. Cooler temperatures will increase cure times. 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 a potential amine blush.

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

It is always recommended to mix the entire kit, whenever possible, to avoid off-ratio mixtures. Mix ratio is 3 parts P-01 Resin (Part A) to 1 part P-01 Hardener (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. To make an epoxy patching material mix no more material than can be mixed and applied within the stated gel time and add the selected aggregate until the desired thickness is achieved. 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	4, 20, 220 Gallon kits
Mix Ratio by Volume	3:1
Mixed Viscosity	400-600 cP 25°C/77°F
Gel Time	35 minutes
Dry to Touch	6 hours
Through Dry	10hours
Dry to Walk	12 hours
Dry to Light Use	16 - 24 hours
Full Cure	7 days
Shore D Hardness	D65 @ 24 hours
Shore D Hardness	D80 @ 7 days
Gloss @ 60 Degree Angle	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	8-12 (135 – 200 sq. ft./gal.)
Available Colors	Clear & Color Packs

PHYSICAL PROPERTIES – P-01 CLEAR EPOXY FLOOR PRIMER

Description	Standard	Results
Tensile Strength	ASTM C307	2,870 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	13,000 psi
Modulus of Elasticity	ASTM C580	N/A
Flexural Strength	ASTM C580	5,750 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	0.053g 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	Moderate 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.

Revised: 3/25/25

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TECHNICAL DATA SHEET: SP-33 ESD EPOXY FLOOR COATING

Product Overview

SP-33 is a pre-pigmented, electrostatic dissipative (ESD), 100% solids epoxy. The coating provides electrical resistance between the range of 10^6 and 10^9 ohms which lasts throughout the life of the coating. It also eliminates the mixing time and mess inherent in using a color pack system. High-hiding, good flow and leveling, toughness and flexibility are characteristics of this high-quality epoxy. The cured material has good, broad-range, chemical resistance as well as good abrasion and impact resistance. SP-33 is compliant with ANSI/ESD STM7.1-2020.

Uses and Benefits

SP-33 is most often used in areas which contain equipment or instrumentation that is susceptible to electrostatic discharge. Areas such as these include but are not limited to: server farms, processing areas, clean rooms, electronics manufacturing/assembly and many others. The recommended coverage of SP-33 is 80-100 sq. ft/gal (16-20 mils) of mixed resin. Multiple coats may be applied to achieve higher build; the recoat window is 12-24 hours. If a second coat is applied after 24 hrs. of the first coat being applied, lightly sand or scuff the basecoat and then solvent wipe the surface with xylene to remove any loose dust or particles. ** **Note**** If SP-33 is applied too thin, the electrostatic dissipative properties will be diminished and will increase the risk of being non-compliant.

Limitations

SP-33 is designed to be applied at 8 mils as a primer, 16-20 mils as a body coat and 10-16 mils as a topcoat. Ideal application temperatures to be between 60-90°F. Cooler temperatures will increase cure times. 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 a potential amine blush. **Note**: Tile Red and Warm Sun appear slightly darker due to carbon black content.

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

It is always recommended to mix the entire kit, whenever possible, to avoid off-ratio mixtures. Mix ratio is 2 parts SP-33 Part A to 1 part SP-33 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

(See '**Copper Foil Grounding Tape**' Section on Page 2 before installing SP-33 ESD Epoxy)

Pour entire content of mixed material onto the floor in ribbons. Spread material using a flat blade or v-notched squeegee. Back roll material using a 3/8" nap roller cover to maintain an even mil thickness of material. 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, 15, 165 Gallon kits
Mix Ratio by Volume	2:1
Mixed Viscosity	500-800 cP 25°C/77°F
Gel Time	35 minutes
Dry to Touch	6-8 hours
Through Dry	10-12 hours
Dry to Walk	12-16 hours
Dry to Light Use	16-24 hours
Full Cure	7 days
Shore D Hardness	D65 @ 24 hours
Shore D Hardness	D78 @ 7 days
Gloss @ 60 Degree Angle	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	8-20 (80 – 200 sq.ft./gal.)
Available Colors	Light Gray, Medium Gray, Tile Red and Warm Sun Tile Red

Copper Foil Grounding Tape

- Polymer Nation recommends installing copper foil tape between the primer (P-01 Epoxy Primer) and the SP-33 ESD Epoxy bodycoat to ensure that any electrostatic discharge is properly grounded.
- It should be connected to ground by a qualified electrician before the area is returned to service.
- The copper foil tape to be used and installed should meet the following requirements:
  - minimum of 1/2" in width
  - copper foil tape is to be installed at one point per 1,000 SF
  - McMaster-Carr (mcmaster.com) is a supplier of copper foil grounding tape (see Part #76555A642)
- For further information or questions, please reach out to techservice@polymernation.com or your local Polymer Nation Distributor.

Resistance Testing

- SP-33 is designed to have electrical resistance between 10^6-10^9 ohms when properly mixed and installed.
- Field testing of SP-33 should be in accordance with **ANSI/ESD STM7.1-2020**.
- SP-33 should be allowed to cure a minimum of 24-48 hours at ambient temperatures before any ohm readings are performed. This allows SP-33 to achieve suitable Shore D hardness (65-75). Conducting premature ohm reading tests may result in collecting inaccurate, unreliable data.

PHYSICAL PROPERTIES
SP-33 ESD EPOXY FLOOR COATING

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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	0.053g Loss (when higher abrasion resistance is required the addition of PC 1336 to the coating should be included)
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Revised: 4/23/25