Polymer Nation – PolyGuard 160

Technical Data Sheets

Primer: F-01 -Epoxy primer (pigmented)

Body: F-41 – UV Resistant Epoxy (pigmented)

Metallic pigments mixed with body coat

Wear: F-61 – Slow Speed Polyaspartic

Made in the USA with domestic and imported ingredients.

POLYMER NATION CHEMICAL COMPANY, LLC

Setting the Standard

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

TECHNICAL DATA SHEET: F-01 CLEAR EPOXY FLOOR COATING

Product Overview

F-01 is our workhorse, clear, 100% solids epoxy. It can be ordered with 3 different speed hardeners- Standard, Medium and Fast. This allows for easy transition between cold and warm weather applications and cure times. 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

F-01 is most often used as a primer, broadcast resin and topcoat 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

F-01 is designed to be applied at 8-12 mils as a primer, 12-20 mils as a body coat and 10-16 mils as a topcoat. Ideal application temperatures to be between 60 – 85°F. Cooler temperatures will increase cure times. Warmer temperatures will decrease working and cure times. Polymer Nation has tested its materials with our PN 1338 metallic powders. While we have taken every precaution to formulate an exceptional epoxy coating, certain undesired results in so-called epoxy metallic systems in which Polymer Nation resins are used (i.e. F-01, F-41, P-01) may occur due to a number of factors including mixing, placement techniques and thermal variations in the installation area. Good coating practices are required when installing our coatings. See our Solution Guide for helpful information. 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 2 parts F-01 Resin (Part A) to 1 part F-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	3, 15 & 165 Gallon Kits
Mix Ratio by Volume	2:1
Mixed Viscosity	500-600 cP 25°C/77°F
Gel Time S/M/F	45/30/15 minutes
Dry to Touch	8/4/2 hours
Through Dry	10/7/5 hours
Dry to Walk	12/8/6 hours
Dry to Light Use	24/16/12 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	Clear and Color Packs

PHYSICAL PROPERTIES – F-01 CLEAR EPOXY FLOOR COATING

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 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)
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: 3/25/2025

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TECHNICAL DATA SHEET: F-41 CLEAR UV RESISTANT EPOXY FLOOR COATING

Product Overview

F-41 consists of a low viscosity, nonylphenol-free, clear, UV resistant epoxy resin with our UV resistant, cycloaliphatic amine curing agent. This combination achieves a UV resistant, clear epoxy with good flow and leveling, characteristics. The cured material has good broad-range chemical resistance as well as good abrasion and impact resistance.

Uses and Benefits

F-41 is most often used as a clear topcoat for resinous concrete flooring projects that may experience higher UV exposure than is found in most interior environments.

Limitations

F-41 is designed to be applied at 10-20 mils as a topcoat. Ideal application temperatures to be between 60 – 85°F. Cooler temperatures will increase cure times. Warmer temperatures will decrease working and cure times. Polymer Nation has tested its materials with our PN 1338 metallic powders. While we have taken every precaution to formulate an exceptional epoxy coating, certain undesired results in so-called epoxy metallic systems in which Polymer Nation resins are used (i.e. F-01, F-41, P-01) may occur due to a number of factors including mixing, placement techniques and thermal variations in the installation area. Good coating practices are required when installing our coatings. See our Solution Guide for helpful information. 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 2 parts F-41 Resin (Part A) to 1 part F-41 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. 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, 15 & 165 Gallon Kits
Mix Ratio by Volume	2:1
Mixed Viscosity	600-700 cP 25°C/77°F
Gel Time	45 minutes
Dry to Touch	5 - 6 hours
Through Dry	10 - 12 hours
Dry to Walk	15 hours
Dry to Light Use	18 - 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	10-20 (80 – 160 sq. ft./gal.)
Available Colors	Clear and Color Packs

PHYSICAL PROPERTIES – F-41 CLEAR UV RESISTANT EPOXY FLOOR COATING

Description	Standard	Results
Tensile Strength	ASTM C307	2,870 psi
Moisture Absorption	ASTM C413	<.19 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 D1653	See ASTM D3010
Impact Resistance	ASTM D2794	>160 inch pounds
Adhesion	ASTM D3359	5A
Abrasion Resistance CS17 1000 g 1000cycles in g Loss	ASTM D4060	0.043g 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	Slight yellowing

* 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.

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: F-61 SLOW SPEED CLEAR POLYASPARTIC

Product Overview

F-61 combines a proprietary blend of polyaspartic resins with aliphatic hardeners to create our slowest speed, clear polyaspartic. F-61 is an 83% solids, low odor, low viscosity polyaspartic that provides easy application with a moderately fast dry time. It will not yellow or chalk over time and provides a great, high gloss finish with as little as 6 mils WFT.

Uses and Benefits

F-61 is primarily used as a clear topcoat due to its unsurpassed UV and abrasion resistance. It can be applied to floors and walls and adheres well to many substrates including concrete, gypsum, cement board, metals and fiberglass.

Limitations

F-61 is designed to be applied between 6-15 mils as a topcoat for floors and 5-6 mils as a topcoat on walls. Ideal application temperatures to be between 70-90°F and 60% RH or less. Cooler temperatures will increase cure times. Warmer temperatures will decrease working and cure times.

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 F-61 Part A to 1 part F-61 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 ribbon of mixed material onto the floor and spread using a flat blade or notched squeegee. Back roll material immediately using a 3/8” nap roller cover to maintain an even mil thickness of material while maintain a wet edge. Pour next ribbon on top of wet material and repeat the process. 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, 15, 165 Gallon kits
Mix Ratio by Volume	2:1
Mixed Viscosity	250-350 cP 25°C/77°F
Working Time	15-20 minutes
Dry to Touch	4-5 hours
Through Dry	10-12 hours
Dry to Walk	14-18 hours
Dry to Light Use	18 - 24 hours
Full Cure	7 days
Pendulum Hardness (König)	18 @ 24 hours
Pendulum Hardness (König)	50 @ 7 days
Gloss @ 60 Degree Angle	>90
VOC’s of Mixed Material	165 g/L (calculated)
Color Scale	N/A
Solids by Volume Mixed	83%
Application in Mils	5-15 (110 – 300 sq. ft./gal)
Available Colors	Clear and Color Packs

PHYSICAL PROPERTIES
F-61 SLOW SPEED CLEAR POLYASPARTIC

Description	Standard	Results
Tensile Strength	ASTM C307	3,270 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	12,500 psi
Modulus of Elasticity	ASTM C580	N/A
Flexural Strength	ASTM C580	5,550 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	2-5/175 When pigmented
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	0.75
Coefficient of Friction Wet Ave. three tests	NFSI B101.1	0.7
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 60-85 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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