General Industrial Coatings

CC-D19

POLANE® S Plus Polyurethane Enamel

Black	F63B21	Blue	F63L27	Blending White	F63W25
Orange	F63E23	Magenta	F63R20	Yellow Oxide	F63Y23
Clear	F63F24	Red Oxide	F63R28	Yellow (Red Shade)	F63Y24
Green	F63G26	Bright Red	F63R29	Catalyst	V66V55
				Custom Blend Series	F63RX

DESCRIPTION

POLANE® S Plus Polyurethane Enamel is a low gloss, two component, high solids acrylic polyurethane providing excellent durability at 2.8 lb/gal VOC* when catalyzed and reduced. Its hardness and chemical resistance make it an ideal coating for exterior building products, extrusions, farm and construction equipment, machinery, transformers, transportation, communication equipment, and a broad array of plastic and metal applications.

Advantages:

- VOC 2.8 lbs/gal catalyzed and reduced
- Excellent color and gloss retention for exterior applications
- Excellent physical and chemical performance properties
- Excellent appearance over many types of metal and plastic substrates
- Direct adhesion to a wide array of plastic substrates
- Lower energy cure system - air dry or force dry
- High solids - high spreading rate
- Full color range through monochromatic intermix system
- Excellent hardness, mar resistance and abrasion resistance
- Texturable
- Apply by conventional, airless, air-assisted airless, HVLP, or electrostatic spray
- Intermixable with Polane HS Plus Polyurethane to provide full gloss range
- Good gloss consistency over humidity and cure extremes
- Meets the performance requirements of AAMA 2603 for extruded aluminum
- Meets the coating performance requirements of the ANSI Specification for pad mounted transformers

*VOC Compliance limits vary from state to state; please consult local Air Quality rules and regulations.

An Environmental Data Sheet is available from your local Sherwin-Williams facility or at www.PaintDocs.Com.

CHARACTERISTICS

60° Gloss: 25-30 units

Volume Solids: 59 ± 2 %
Catalyzed and reduced, may vary by color

Viscosity (Zahn cup series)**:**
18-25 secs., #3 Zahn Cup
Catalyzed and reduced

Recommended Film Thickness:

Mils Wet	3.1-3.3
Mils Dry	1.8-2.0

Spreading Rate (no application loss)**:**
475-525 ft.^{2}/gal. at 1.8-2.0 mils DFT

Cure:

Air Dry or Force Dry	30-60 mins. at 140-180° F

Substrate Disclaimer: Curing of coating at temperatures higher than the heat distortion parameters of the substrate may cause substrate issues.

Drying: 1.8 mils DFT, 77° F, 50% RH

To Touch	20-25 minutes
Tack Free	45-90 minutes
To Handle	4-8 hours
To Recoat	15-30 minutes

Accelerated Drying:
Add ¼ ounce of Polane Accelerator (V66VB11) per gallon of Polane S Plus. Potlife is reduced to 1 hour.

To Touch	15-20 minutes
Tack Free	30-60 minutes
To Handle	2-4 hours
To Recoat	15-30 minutes

Mixing Ratio:

Polane S Plus	6 Parts
Catalyst V66V55	1 Part
R6K30 (MAK)	0.175 Part (2½ %)

Potlife: 2 hours

Flash Point: 102° F
Pensky Martens Closed Cup

Package Life:

F63L27 and V66V55	1 year, unopened
All Other	2 years, unopened

Air Quality Data:

- Non-photochemically reactive
- Volatile Organic Compounds (VOC) Theoretical catalyzed and reduced as above 2.8 lbs/gal, 336 g/L

SPECIFICATIONS

General: Substrate should be free of grease, oil, dirt, fingerprints, drawing compounds, any contamination, and surface passivation treatments to ensure optimum adhesion and coating performance properties. Consult Metal Preparation Brochure CC-T1 for additional details.

Aluminum or Galvanized Steel (untreated): Prime with RoHS Compliant Wash Primer, P60G10, Industrial Wash Primer, P60G2, or Kem Aqua® Wash Primer, E61G522, followed by Polane Plus Sealer, E65A71 or 2.8 VOC Catalyzed Epoxy Primer, E61A280.

Plastic: Due to the diverse nature of plastic substrates, a coating or coating system must be tested for acceptable adhesion to the substrate prior to use in production. Reground and recycled plastics along with various fire retardants, flowing agents, mold release agents, and foaming/blowing agents will affect coating adhesion. A filler or primer/barrier coat may be required. Please consult your Sherwin-Williams Sales Representative for system recommendations.

Steel or Iron: Remove rust, mill scale, and oxidation products. For best results, treat the surface with a proprietary surface chemical treatment of zinc or iron phosphate to improve corrosion protection. For best corrosion resistance, prime untreated steel with 2.8 VOC Catalyzed Epoxy Primer, E61A280.

Cast Iron: Fill with Polane 2.8 Plus SprayFil, D61H75 and sand, seal with Polane Plus Sealer, E65A71.

Testing: The information, data, and recommendations set forth in this Product Data Sheet are based upon test results believed to be reliable. However, due to the wide variety of substrates, substrate properties, surface preparation methods, equipment and tools, application methods, and environments, the customer should test the complete system for adhesion, compatibility, and performance prior to full scale application.

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APPLICATION

Typical Setups

Reduction: Reduce with R6K30. Maximum total reduction is 2.5% by volume to maintain 2.8 VOC.

Conventional Spray:

Air Pressure	40-50 psi
Fluid Pressure	5-10 psi
Tip	0.047 in.

Airless Spray:

Fluid Pressure	2,000-2,800 psi
Tip	0.011-0.013 in.

Air Assisted Airless Spray:

Air Assist Pressure	10-30 psi
Fluid Pressure	1,500-2,100 psi
Tip	0.011-0.013 in.

Electrostatic Spray:

Conductivity is 1.0-1.5 megohms resistance, which is suitable for all hand-held electrostatic spray setups.

HVLP Spray:

Atomizing Air Pressure (at the cap) 8-10 psi

Fluid Pressure	5-10 psi
Tip	0.055 in.

Dipping, brushing or flow coat application is not recommended.

Equipment/application guidelines are only guidelines and individual application & process parameters will dictate exact requirements.

Cleanup: Clean tools/equipment immediately after use with Reducer, R7K95 or MAK. Polane reducers, MEK and MIBK may also be used but are not HAPS compliant.

Follow manufacturer's safety recommendations when using any solvent.

Performance Tests*

Substrate: Bonderite® 1000 P60 steel panels F63W25 catalyzed and reduced 1.8 mils DFT

Cure: 30 mins at 180° F,14 days post-cure

Humidity (100° F, 100% RH):	500 hours
Impact Resistance, Direct	60 in lb
Impact Resistance, Indirect	10 in lb
Pencil Hardness	H
Conical Mandrel, 1/8"	Pass
Tabor Abrasion	<100 mg
	CS 17 wheel, 1,000 g, 1,000 cycles
Water Immersion	24 hours
	No blistering or loss of adhesion
Adhesion, Crosshatch	Excellent
MEK, 100 double rubs	slight burnish
QUV, 1,220 hrs, 95% gloss	0.7 ΔE max

*Performance test results may vary depending on dry film thickness, substrate tested and post-cure duration.

Chemical Resistance

Lubricating & Cutting Oils	Excellent
Hydraulic Fluids	Excellent

ADDITIONAL INFORMATION

1. Polane S Plus coating must be catalyzed with V66V55. **Do not vary catalyst ratio.** Maintain an exact ratio. The catalyst ratio has been established for optimum hardness, flexibility, gloss, chemical and solvent resistance. Do not use Polane Interior Catalyst V66V27 or V66V47. Using these catalysts will shorten potlife and cause film embrittlement.
2. Do not blend with any polyurethane other than Polane HS Plus. No other catalysts, colorants or reducers are recommended because foreign materials such as alcohols and glycols destroy performance properties. Lacquer thinners and alcohol containing solvent blends should not be used with Polane enamels.
3. F63E23 and F63Y24 have limited hiding and should be used with other colors. F63G26, F63L27, F63R20 and F63R29 have high tinting strength but lack hiding and must be mixed with other colors. Organic monochromatics should not be used by themselves.
4. F63R29 should be used with caution in exterior formulations. When used in an exterior application, F63R29 must compose at least 80% of the total color/pigment amount to prevent fading. It is suggested to reformulate using F63R20 or F63R28.
5. Polane S Plus coatings are not recommended for exterior use on wood.
6. Do not spray hot. Heat shortens potlife. Do not pump catalyzed materials from drums into circulating system. Friction heat developed by pumps and circulation will shorten potlife.
7. Protect Polane enamels, catalysts and reducer from moisture as water affects potlife and properties. Store indoors.
8. Do not package Polane coated products in airtight plastic bags unless completely cured. Since Polane enamels continue to cure for several weeks, the buildup of organic solvents and reaction by-products could cause improper cure and adhesion failure in use.
9. A primer is always recommended for exterior application on steel.
10. Do not exceed 2.5 mil dry film with airless or air assisted airless equipment due to sagging tendencies.
11. Use Polane HS Plus Silver F63S65 for metallic colors in this quality. F63S65 - does not offer the same color and gloss retention as other colors because of the weathering effect of aluminum pigment. Do not use for applications requiring long- term color and gloss retention.
12. Use MEK as a reducer for Silver F63S65 rather than MAK. The faster evaporation of MEK helps the metallic pigment orientation.
13. The Clear F63F24 is intended for custom color intermixing and should not be used as a clear coat because of its potential for yellowing.
14. Blending of these monochromatic bases is used to create custom colors. Colorants are not used to tint this product line.

CAUTIONS

FOR INDUSTRIAL SHOP APPLICATION ONLY

Thoroughly review the product label and Safety Data Sheet (SDS) for safety information and cautions prior to using this product.

To obtain the most current version of the Environmental Data Sheet (EDS), Product Data Sheet (PDS), or Safety Data Sheet (SDS) please visit your local Sherwin-Williams facility or www.PaintDocs.Com.

Please direct any questions or comments to your local Sherwin-Williams facility.

Note:

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