General Industrial Coatings

CC-D19 REU

POLANE® S Plus Polyurethane Enamel

Black	F63BC161	Blue	F63LC169	Blending White	F63WC160
Orange	F3EC165	Magenta	F63R20	Yellow Oxide	F63YC162
Clear	F63FC164	Red Oxide	F63RC163	Yellow (Red Shade)	F63YC167
Green	F63GC168	DDP Red	F63RC167	Catalyst	V66V55

DESCRIPTION

Polane® S Plus Polyurethane Enamel is a low gloss, two component, acrylic polyurethane providing high volume solids and excellent exterior durability. Its hardness, chemical resistance and durability make it an ideal coating for exterior building products, extrusions, farm & construction equipment and a broad array of plastic & metal applications.

Advantages:

- Full color range through monochromatic intermix system
- Excellent exterior color and gloss retention for exterior applications
- Excellent exterior physical and chemical performance properties
- Excellent hardness, mar resistance and abrasion resistance
- Excellent appearance over many types of metal and plastic substrates
- Direct adhesion to a wide array of plastic substrates
- Good gloss consistency over humidity and cure conditions
- High solids - high spread rate
- Texturable
- Air dry or force dry curing
- Low energy cure
- Intermixable with Polane HS Plus Polyurethane Enamel to provide a full gloss range coating
- Meets the performance of AAMA 2603-98 for extruded aluminum
- Meets the coating performance requirements of the ANSI Specification for pad mounted transformers
- Apply by conventional, airless, HVLP, electrostatic and air-assisted airless spray
- Complies with 3.5 *VOC solvent emissions
- Non-photochemically reactive
- Formulated to be HAPS free
- Free of chromate hazards

* 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

Volume Solids: 59 ± 2 %
catalyzed & reduced, may vary by color

Viscosity (#4 Din Cup)**:** 17-24 secs.
catalyzed & reduced

Recommended Film Thickness:

Microns Wet	78-84
Microns Dry	46-50

Spreading Rate (no application loss)**:**
11-13 m^2/L at 46-50 µm DFT

Cure:

Air Dry or Force Dry	30-60 mins. at 60-71° C

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

Drying(46 µm at 25° C, 50% RH)**:**

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

Mixing Ratio (by volume)**:**

Polane S Plus	6 Parts
V66V55 Catalyst	1 Part
*Reducer	0.3 Part (5% vol.)

*R6K18 (butyl acetate) or R6KU30 (MIAK)

Potlife: 2 hours

Accelerated Drying (46 µm at 25° C, 50% RH)**:**
Add up to 15 mils of Polane Accelerator, V66VB11 per 3.75 liters of Polane S Plus.

To Touch	15-30 minutes
Tack Free	30-60 minutes
To Handle	2-4 hours
To Recoat w/ Itself	15-30 minutes

Accelerated Mixing Ratio (by volume)**:**

Polane S Plus	6 Parts
V66V55 Catalyst	1 Part
*Reducer	0.35 Part (5% vol.)

*R6K18 (butyl acetate) or R6KU30 (MIAK)

Accelerated Potlife: 1 hour

Flash Point: 39.4° C

Air Quality Data:

Non-Photochemically Reactive	
Volatile Organic Compounds (VOC, max.)	420 g/L
(catalyzed & reduced as above)	3.5 lbs/gal

Recommended Storage: Inside, sealed container, 40-120° F, no freeze hazard. Protect from moisture.

Package Life: 2 years, unopened

SPECIFICATIONS

General: All substrates should be free of mold release, oil, grease, dirt, fingerprints, drawing compounds, surface passivation treatments and any other contaminants to ensure optimum adhesion and coating performance. Consult Metal Preparation brochure CC-T1 for additional details.

Aluminum or Galvanized Steel: If untreated, prime with Industrial Wash Primer, P60G2, or Kem Aqua® Wash Primer, E61G520, followed by Polane Plus Sealer, E65A71 or 2.8 VOC Catalyzed Epoxy Primer, E61A280. Over "pre-treated" aluminum, check adhesion before use as the proprietary pre-treatment may change from supplier to supplier which may have an effect on the final adhesion.

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 Product Finishes 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. For best corrosion protection, 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.

APPLICATION

Typical Setups

Reduction: Maximum total reduction is 5% by volume to maintain 420 gram/liter (3.5 lbs/gal.) VOC.

May be applied by: Conventional Spray
Airless Spray
Air Assisted Airless Spray
Electrostatic Spray
HVLP Spray

Conventional Spray:

Air Pressure	2.8-3.5 Bars
Fluid Pressure	0.3-0.7 Bars
Tip	0.047 in.

Airless Spray:

Pressure	140-195 Bars
Tip	0.009-0.011 in.

Air Assisted Airless Spray:

Atomizing Air Pressure	0.7-2.1 Bars
Fluid Pressure	40-65 Bars
Tip	0.011-0.013 in.

Electrostatic Spray:

Paint conductivity is 1.0-2.0 Megohms resistance, which is suitable for most hand held electrostatic spray setups.

HVLP Spray:

Air Pressure	Max 0.5-0.7 Bars at cap
Fluid Pressure	0.3-0.7 Bars
Tip	0.055 in.

Dipping, brushing or flowcoat 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 reducers R6K18 (butyl acetate), or R6KU30 (MIAK). Polane reducers MEK and MIBK may also be used but are not HAPS compliant.

Follow manufacturer's safety recommendations when using any solvent.

ADDITIONAL INFORMATION

1. This product must be properly catalyzed with V66V55 for exterior application. **DO NOT VARY CATALYST RATIO.** Maintain an exact ratio. The catalyst ratio has been established for optimum hardness, flexibility, gloss, and chemical & solvent resistance. Do not use Polane interior catalysts V66V27 or V66V44; they give a brittle film and a very short pot life.
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. F63EC165 and F63YC167 have limited hiding and should be used with other colors. F63GC168, F63LC169, F63R20 and F63RC167 have high tinting strength but lack hiding and must be mixed with other colors. Organic monochromatics should not be used by themselves.
4. Polane S Plus coatings are not recommended for exterior use on wood.
5. Do not spray hot. Heat shortens potlife. Do not pump catalyzed materials from drums into circulating systems. Friction heat developed by pumps and circulation will shorten pot life.
6. Protect Polane Enamels, Catalyst and Reducer from moisture as water affects potlife and properties. Store indoors.
7. 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.
8. A primer is always recommended for exterior application on steel.
9. Do not exceed 65 microns dry film with airless or air assisted airless equipment due to sagging tendencies.
10. 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.
11. Use MEK as a reducer for Silver F63S65 rather than MAK. The faster evaporation of MEK helps the metallic pigment orientation.
12. The Clear F63F24 is intended for custom color intermixing and should not be used as a clear coat because of its potential for yellowing.
13. For air-assisted applications, solvent blend adjustments may be necessary.

Performance Tests

Substrate:	Bonderite® 1000 Cold rolled steel panels
Topcoat:	46 µm DFT, F63WC160
Cure:	30 mins. @ 64° C, 14 days air cured

Humidity (38° C, 100% RH)	500 hours
Conical Mandrel	Pass
Impact Resistance, Direct	60 in lb
Impact Resistance, Reverse	10 in lb
Pencil Hardness	H*

*Pencil Hardness may vary depending on dry film thickness, substrate and tester.

Water Immersion	24 hours No blistering or loss of adhesion
Adhesion, Crosshatch	Excellent
MEK, 100 Double Rubs	Slight Burnish
QUV-A (1200 hours)	95% gloss retention 0.07 ΔE maximum

Chemical Resistance

Lubricating & Cutting Oils	Excellent
Hydraulic Fluids	Excellent

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.

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