General Industrial Coatings

CC-D20

POLANE® HS Plus Polyurethane Enamel

Black	F63B60	Brite Red	F63R66	Hi Hide Organic Yellow RS	F63Y65
Blue	F63L63	Red Oxide	F63R64	Catalyst	V66V55
Clear	F63V67	Silver	F63S65	Custom Blend Series	F63JX
Blending Clear	F63V68	White	F63W66		

DESCRIPTION

POLANE® HS Plus Polyurethane Enamel is a two-component coating providing high gloss, excellent exterior durability and resistance properties along with high volume solids and 2.8 VOC* compliance. The single pigment colors are designed for intermixing to achieve great versatility in color matching capability.

Advantages:

- Excellent exterior color and gloss retention
- Excellent exterior physical and chemical performance properties
- Excellent hardness and impact resistance
- Excellent appearance over many types of metal and plastic substrates
- Excellent mar and abrasion resistance
- High solids - high spreading rate
- Air dry or force dry
- Available in a broad range of colors
- Ideal coating for machine tool industry with resistance to most lubricants and cutting oils
- Under 2.8 VOC with Polane HS Plus Catalyst V66V55
- Apply by conventional, airless, HVLP or electrostatic spray
- Much faster drying times achieved with the use of infratherm type ovens

CHARACTERISTICS

(may vary by color)

60° High Gloss: 90+

Volume Solids: 60 ± 2 %
Catalyzed and reduced

Viscosity: 18-27 secs., #3 Zahn Cup
Catalyzed and reduced

*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.

Recommended Film Thickness:

Mils Wet	2.0-2.5
Mils Dry	1.25-1.5

Spreading Rate (no application loss)**:**
640-770 ft.^{2}/gal. at 1.25-1.5 mils DFT

Cure:
Air Dry or
Force Dry 30-60 minutes 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: 1.5 mils DFT, at 77° F, 50% RH

To Touch	1–1½ hours
Tack Free	8 hours
To Handle	10-12 hours
To Recoat	5-6 hours

Infratherm oven schedule to tack free:
Flash off: 1 minute
1.5 lbs. Gas: 3 min., 2.5 lbs. Gas: 7 min

Mixing Ratio:

Polane HS Plus	3 parts
V66V55 Catalyst	1 part
R6K30 (MAK)	0.48 parts (12%)
Potlife:	3 hours

Accelerated Drying:
Add up to 1 ounce of Polane Accelerator (V66VB11) per gallon of Polane HS Plus

Potlife:	1 hour
To Touch	30-60 minutes
Tack Free	1-2 hours
To Handle	2-3 hours
To Recoat	1–1½ hours
Force Dry	30 minutes at 140-180° F

Flash Point (Pensky Martens Closed Cup)**:** 95° F

Air Quality Data:
Non-photochemically reactive
Volatile Organic Compounds (VOC), Less Exempts

As packaged	≤ 2.8 lbs/gal, 336 g/L
Catalyzed and reduced	≤ 2.8 lbs/gal, 336 g/L

Package Life:

	2 years, unopened
V66V55	12 months, 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 (untreated): Prime with RoHS Compliant Wash Primer, P60G10 or Industrial Wash Primer, P60G2, or Kem Aqua® Wash Primer, E61G522, followed by Polane Plus Sealer, E65A71 or 2.8 VOC Catalyzed Epoxy Primer, E61A280.

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 untreated metal: 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.

For best corrosion resistance, prime treated steel with Polane Plus Sealer, E65A71 or 2.8 VOC Catalyzed Epoxy Primer, E61A280.

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 12% by volume to maintain 2.8 VOC. Additional reduction may exceed 2.8 VOC.

Conventional Spray:

Air Pressure	40-50 psi
Fluid Pressure	5-10 psi

Airless Spray:

Fluid Pressure	2,000-2,800 psi
Tip	0.009-0.011 in.

Air Assisted Airless Spray:

Air Assist Pressure	10-30 psi
Fluid Pressure	600-900 psi
Tip	0.009-0.013 in.

Electrostatic Spray:
Conductivity is 0.4-0.8 megohms resistance, which is suitable for all hand-held electrostatic spray setups.

HVLP Spray:

Air Pressure	3-5 psi
Fluid Pressure	5-10 psi
Tip	0.040 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 and 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
Topcoat:	1.5 mils DFT, F63W66 catalyzed and reduced
Cure:	30 mins at 180° F, 14 days post-cure

Salt Spray	300 hours
	1/8" rust creepage at scribe
Humidity (100° F, 100% RH)	300 hours
Impact Resistance, Direct	80 in lb
Impact Resistance, Reverse	80 in lb
Pencil Hardness	H

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

Adhesion	Excellent
Taber Abrasion	<100 mgs
	CS17 wheel, 1,000 g, 1,000 cycles
Water Immersion	24 hours
Adhesion, Crosshatch	Excellent
MEK, 100 double rubs	Slight burnish
Heat resistance, Dry	250° F

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

ADDITIONAL INFORMATION

1. Polane HS Plus coatings must be 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, chemical and solvent resistance.
2. For low gloss exterior applications, use Polane S Plus coatings rather than lowering gloss of Polane HS Plus.
3. Do not blend with polyurethane other than Polane S Plus for exterior applications. No other catalysts, colorants, flatting bases 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.
4. Organic colors have limited hiding by themselves and must be blended with other chromatics for use.
5. Polane HS Plus coatings are not recommended for use on exterior wood.
6. Do not spray hot. Heat shortens potlife.
7. Do not pump catalyzed materials from drums into a circulating system. Friction heat developed by pumps and circulation will shorten potlife.
8. Protect Polane enamels, catalysts and reducers from moisture as water affects potlife and properties. Store indoors.
9. 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.
10. Do not exceed 1.5 mil dry film with airless or air assisted airless equipment due to sagging tendencies.
11. Silver 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. For SILVER ONLY, use MEK as a reducer rather than MAK. The faster evaporation helps the metallic pigment orientation.
13. Clear F63V67 is intended for custom color intermixing and should not be used as a clearcoat because of its potential for yellowing.
14. Blending Clear, F63V68 is not a stand-alone clear and must be mixed with other components/bases.
15. For interior use, Polane HS Plus may be catalyzed 2:1 with Polane Plus Catalyst V66V47. Reduce with R6K30 (MAK).
16. 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.

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