Protective & Marine Coatings

HI-SOLIDS POLYURETHANE 100

PART A	B65-625	GLOSS
PART A	B65-630	SEMI-GLOSS
PART B	B65V625	HARDENER

Revised: October 24, 2016

PRODUCT INFORMATION

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PRODUCT DESCRIPTION

HI-SOLIDS POLYURETHANE 100 is a two-component, less than 100 g/l VOC, aliphatic, acrylic polyurethane enamel. It is designed for high performance protection with outstanding exterior gloss and color retention.

- Good/excellent resistance to corrosion and weathering
- Outstanding color and gloss retention
- Chemical resistant
- HAPS Free
- Resists film attack by mildew (MR White Tint Base only, B65WW625)

PRODUCT CHARACTERISTICS

Finish:	Gloss or Semi-gloss
Color:	Wide range of colors possible
Volume Solids:	83% ± 2%, mixed, may vary by color
Weight Solids:	87% ± 2%, mixed, may vary by color
VOC (EPA Method 24): mixed	Unreduced: <100 g/L; 0.83 lb/gal May vary by color
Mix Ratio:	3:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	**3.6** (90)	**4.8** (120)
Dry mils (microns)	**3.0** (75)	**4.0** (100)
~Coverage sq ft/gal (m^2/L)	**332** (8.1)	**464** (11.4)
Theoretical coverage **sq ft/gal** (m^2/L) @ 1 mil / 25 microns dft	**1328** (32.5)	

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 4.0 mils wet (100 microns):

	@ 40°F/4.5°C	@ 77°F/25°C *50% RH*	@ 120°F/49°C
To touch:	8 hours	4 hours	2 hours
To handle:	24 hours	14 hours	6 hours
To recoat:			
minimum:	36 hours	24 hours	12 hours
maximum:	14 days	14 days	10 days
To cure:	14 days	10 days	7 days
Pot Life:	4 hours	2 hours	1 hour

If maximum recoat time is exceeded, abrade surface before recoating.

Drying time is temperature, humidity, and film thickness dependent.

Sweat-in-Time: None required

Shelf Life:	Part A: 24 months, unopened Part B: 24 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C).
Flash Point:	109°F (43°C), PMCC, mixed
Reducer/Clean Up:	Reducer #111, R7K111, Oxsol 100

RECOMMENDED USES

- For use over prepared substrates in industrial environments
- Heavy duty interior and exterior structural coating
- A chemical and abrasion resistant equipment and machinery finish
- A gloss and color retentive heavy duty maintenance coating for use in "high visibility" areas
- Exterior surfaces of steel tanks
- Chemical processing equipment
- Exterior metal siding and trim
- Marine Applications
- Oil Field Machinery
- Refineries
- Handrails
- Rolling stock
- Power plants
- Offshore structures
- Clean rooms
- Conveyors
- Paper mills
- Suitable for use in USDA inspected facilities
- Conforms to AWWA D102 OCS #5 & #6.
- Acceptable for use in high performance architectural applications.
- Suitable for use in USDA inspected facilities
- Approved for FIRETEX hydrocarbon finish coats
- Acceptable for use in Canadian Food Processing facilities categories: D1, D3 (Confirm acceptance of specific part numbers/rexes with your SW Sales Representative)

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP6

System Tested*:

1 ct. Corothane I Galvapac @ 3.0 mils (75 microns) dft
1 ct. Hi-Solids Polyurethane 100 @ 4.0 mils (100 microns) dft
*unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	130 mg loss
Accelerated Weathering / SSPC Paint No. 36, Level 3	ASTM D4587, QUVA, 2000 hours, >70% gloss retention	Passes
Adhesion	ASTM D4541	1050 psi
Corrosion Weathering	ASTM D5894, 5 cycles, 1680 hours	Rating 10 per ASTM D714 for blistering; Rating 10 per ASTM D610 for rusting
Direct Impact Resistance	ASTM D2794	160 in. lbs.
Dry Heat Resistance	ASTM D2485	200°F (93°C)
Flexibility	ASTM D522, 180° bend, 1/8" mandrel	Passes
Pencil Hardness	ASTM D3363	HB
Salt Fog Resistance	ASTM B117, 2000 hours	Rating 10 per ASTM D714 for blistering; Rating 9 per ASTM D610 for rusting
Thermal Shock	ASTM D2246, 15 cycles	Excellent

Meets the requirements of SSPC Paint No. 36, Level 3 for white and light colors. Dark colors may require a clear coat.

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RECOMMENDED SYSTEMS

		Dry Film Thickness / ct. Mils	(Microns)
Steel: Epoxy Primer			
1 ct.	Recoatable Epoxy Primer Low VOC	4.0-6.0	(100-150)
1-2 cts.	Hi-Solids Polyurethane 100	3.0-4.0	(75-100)
Steel: Zinc Rich Primer			
1 ct.	Zinc Clad III HS	3.0-5.0	(75-125)
1 ct.	Macropoxy 646-100	5.0-10.0	(125-250)
1-2 cts.	Hi-Solids Polyurethane 100	3.0-4.0	(75-100)
Steel: Epoxy Mastic Primer			
1 ct.	Macropoxy 646	5.0-10.0	(125-250)
1-2 cts.	Hi-Solids Polyurethane 100	3.0-4.0	(75-100)
Steel: Universal Primer			
1 ct.	ProCryl Universal Primer	2.0-4.0	(50-100)
1-2 cts.	Hi-Solids Polyurethane 100	3.0-4.0	(75-100)
Concrete Smooth:			
1 ct.	Macropoxy 646-100	5.0-10.0	(125-250)
1-2 cts.	Hi-Solids Polyurethane 100	3.0-4.0	(75-100)
Galvanized Metal:			
1 ct.	Recoatable Epoxy Primer Low VOC	4.0-6.0	(100-150)
1-2 cts.	Hi-Solids Polyurethane 100	3.0-4.0	(75-100)

The systems listed above are representative of the product's use, other systems may be appropriate.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

* Iron & Steel: SSPC-SP6/NACE 3, 2 mil (50 micron) profile
* Galvanizing: SSPC-SP1
* Concrete & Masonry: SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3

* Primer Required

Surface Preparation Standards

	Condition of Surface	ISO 8501-1 BS7079:A1	SSPC	NACE
White Metal		Sa 3	SP 5	1
Near White Metal		Sa 2.5	SP 10	2
Commercial Blast		Sa 2	SP 6	3
Brush-Off Blast		Sa 1	SP 7	4
Hand Tool Cleaning	Rusted	C St 2	SP 2	-
	Pitted & Rusted	D St 2	SP 2	-
Power Tool Cleaning	Rusted	C St 3	SP 3	-
	Pitted & Rusted	D St 3	SP 3	-

TINTING

Tint with Maxitoner Colorants only into Part A at 100% tint strength. Five minutes minimum mixing on a mechanical shaker is required for complete mixing of color.

APPLICATION CONDITIONS

Temperature: 40°F (4.5°C) minimum, 120°F (49°C) maximum (air, surface, and material) At least 5°F (2.8°C) above dew point

Relative humidity: 85% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging: 2 components premeasured 1 gallon / 3.78 liter mixes, and 4 gallon / 15.1 liter mixes A and B components ordered separately

Weight: 12.35 ± 0.2 lb/gal ; 1.5 Kg/L mixed, may vary with color

SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

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APPLICATION BULLETIN

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SURFACE PREPARATIONS

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Iron & Steel
Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Commercial Blast Cleaning per SSPC-SP6/NACE 3. For better performance, use Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils / 50 microns). Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Galvanized Steel
Allow to weather a minimum of six months prior to coating. Remove all oil, grease, dirt, oxide and other foreign material by Solvent Cleaning per SSPC-SP1. When weathering is not possible, or the surface has been treated with chromates or silicates, first Solvent Clean per SSPC-SP1 and apply a test patch. Allow paint to dry at least one week before testing adhesion. If adhesion is poor, brush blasting per SSPC-SP7 is necessary to remove these treatments. Rusty galvanizing requires a minimum of Hand Tool Cleaning per SSPC-SP2, prime the area the same day as cleaned. Primer required.

Concrete and Masonry
For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3. Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 75°F (24°C). Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners. Fill bug holes, air pockets and other voids with Steel-Seam FT910. Primer required.

Follow the standard methods listed below when applicable:
ASTM D4258 Standard Practice for Cleaning Concrete.
ASTM D4259 Standard Practice for Abrading Concrete.
ASTM D4260 Standard Practice for Etching Concrete.
ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete.
SSPC-SP 13/Nace 6 Surface Preparation of Concrete.
ICRI No. 310.2R Concrete Surface Preparation.

Surface Preparation Standards

	Condition of Surface	ISO 8501-1 BS7079:A1	SSPC	NACE
White Metal		Sa 3	SP 5	1
Near White Metal		Sa 2.5	SP 10	2
Commercial Blast		Sa 2	SP 6	3
Brush-Off Blast		Sa 1	SP 7	4
Hand Tool Cleaning	Rusted	C St 2	SP 2	-
	Pitted & Rusted	D St 2	SP 2	-
Power Tool Cleaning	Rusted	C St 3	SP 3	-
	Pitted & Rusted	D St 3	SP 3	-

APPLICATION CONDITIONS

Temperature:	40°F (4.5°C) minimum, 120°F (49°C) maximum (air, surface, and material) At least 5°F (2.8°C) above dew point
Relative humidity:	85% maximum

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

Reducer/Clean Up: .....Reducer #111, R7K111, or Oxsol 100

Airless Spray
Pressure.....2500 - 2800 psi
Hose.....3/8" ID
Tip .....013" - .017"
Filter .....none
Reduction.....As needed up to 10% by volume

Conventional Spray
Gun .....Binks 95
Fluid Nozzle .....63 B
Atomization Pressure ....50 - 70 psi
Fluid Pressure.....20 - 25 psi
Reduction.....As needed up to 15% by volume

Brush
Brush.....Natural bristle
Reduction.....As needed up to 15% by volume

Roller
Cover .....3/8" woven with solvent resistant core
Reduction.....as needed up to 15% by volume

If specific application equipment is not listed above, equivalent equipment may be substituted.

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APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mix contents of each component thoroughly with low speed power agitation. Make certain no pigment remains on the bottom of the can. Then combine 3 parts by volume of Part A with 1 part by volume of Part B. Thoroughly agitate the mixture with power agitation.

If reducer solvent is used, add only after both components have been thoroughly mixed.

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	**3.6** (90)	**4.8** (120)
Dry mils (microns)	**3.0** (75)	**4.0** (100)
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NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 4.0 mils wet (100 microns):

	@ 40°F/4.5°C	@ 77°F/25°C *50% RH*	@ 120°F/49°C
To touch:	8 hours	4 hours	2 hours
To handle:	24 hours	14 hours	6 hours
To recoat:			
minimum:	36 hours	24 hours	12 hours
maximum:	14 days	14 days	10 days
To cure:	14 days	10 days	7 days

If maximum recoat time is exceeded, abrade surface before recoating.

Drying time is temperature, humidity, and film thickness dependent.

Pot Life:	4 hours	2 hours	1 hour
Sweat-in-Time:		None required	

Application of coating above maximum or below minimum recommended spreading rate may adversely affect coating performance.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Reducer #111, R7K111. Clean tools immediately after use with Reducer #111, R7K111. Follow manufacturer's safety recommendations when using any solvent.

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PERFORMANCE TIPS

Stripe coat all crevices, welds, and sharp angles to prevent early failure in these areas.

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross spray at a right angle.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

Excessive reduction of material can affect film build, appearance, and adhesion.

Do not apply the material beyond recommended pot life.

Do not mix previously catalyzed material with new.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer #58.

Mixed coating is sensitive to water. Use water traps in all air lines. Moisture contact can reduce pot life and affect gloss and color.

Oxsol 100 Reducer can be used to improve the brush and roll charactersitics when applying this product by brush or roller.

Refer to Product Information sheet for additional performance characteristics and properties.

SAFETY PRECAUTIONS

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