Protective & Marine Coatings

MACROPOXY® HS
HIGH SOLIDS EPOXY

PART A	B58-400	SERIES
PART B	B58V400	HARDENER

Revised 12/10

PRODUCT INFORMATION

4.51

PRODUCT DESCRIPTION

MACROPOXY HS HIGH SOLIDS EPOXY is a low VOC epoxy polyamide mastic designed for application to properly prepared steel surfaces. May be used as a one or two coat, direct-to-metal protective coating. Can be applied to marginally prepared surfaces.

- Long-term durability
- Corrosion resistant
- Resistant to many solvents and chemicals
- Barrier coat or universal primer when applying high performance coating over alkyds, to prevent lifting
- Low VOC
- Outstanding application properties

PRODUCT CHARACTERISTICS

Finish:	Semi-Gloss
Color:	Wide range of colors available, including safety colors
Volume Solids:	80% ± 2%, mixed, may vary by color
Weight Solids:	82% ± 2%, mixed, may vary by color
VOC (EPA Method 24): mixed	Unreduced: <250 g/L; 2.08 lb/gal Reduced 10%: <300 g/L; 2.50 lb/gal
Mix Ratio:	1:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	**4.0** (100)	**8.0** (200)
Dry mils (microns)	**3.0*** (75)	**6.0*** (150)
~Coverage sq ft/gal (m^2/L)	**215** (5.2)	**425** (10.4)
Theoretical coverage **sq ft/gal** (m^2/L) @ 1 mil / 25 microns dft	**1280** (31.4)	

*See Performance Tips section

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

Drying Schedule @ 6.0 mils wet (150 microns):

	@ 50°F/10°C	@ 77°F/25°C *50% RH*	@ 100°F/38°C
To touch:	7 hours	4-6 hours	2-4 hours
To stencil:	8 hours	4-6 hours	4 hours
To recoat:			
minimum:	24 hours	18 hours	8 hours
maximum:	30 days	30 days	21 days
To cure:	7 days	7 days	5 days

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

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

Pot Life:	6 hours	45 minutes	30 minutes
	N/A	4 hours*	2 hours*

*Reduced 10% with MEK

Sweat-in-time:	30 minutes	15 minutes	5 minutes

Shelf Life:	36 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C).
Flash Point:	105°F (40.5°C), PMCC, mixed
Reducer/Clean Up:	Reducer #54 (R7K54) or MEK (R6K10)
In California:	Use Oxsol 100 (exempt solvent) or R7K111

RECOMMENDED USES

For use over prepared substrates such as steel and concrete in industrial environments.

- Structural steel
- Refineries
- Railcars
- Power plants
- Paper mills
- Tanks
- Vessels
- Marine applications
- Self-priming coating for marginally prepared substrates
- Suitable for use in USDA inspected facilities
- Conforms to AWWA D102, OCS #5

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP6/NACE 3

System Tested*:

1 ct. Macropoxy HS @ 5.0-6.0 mils (125-150 microns) dft

*unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycle,1 kg load	60 mg loss
Adhesion	ASTM D4541	750 psi
Dry Heat Resistance	ASTM D2485	225°F (107°C)
Exterior Durability	1 year at 45° South	Excellent, chalks
Flexibility	ASTM D522, 180° bend, 5/8" mandrel	Passes
Moisture Condensation Resistance	ASTM D4585, 100°F (38°C), 1000 hours	Passes, no blistering, rust, or delamination
Pencil Hardness	ASTM D3363	H
Salt Fog Resistance	ASTM B117, 1000 hours	Passes-no cracking, softening or delamination, no more than 1/16" rust creepage at scribe

Epoxy coatings may darken or yellow following application and curing.

continued on back

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RECOMMENDED SYSTEMS

		Dry Film Thickness / ct. Mils	(Microns)
Steel, light/moderate service:			
1 ct.	Macropoxy HS	3.0-6.0	(75-150)
Steel, severe service:			
2 cts.	Macropoxy HS	3.0-6.0	(75-150)
Steel:			
1 ct.	Macropoxy 920 Pre-Prime	1.5	(40)
1-2 cts.	Macropoxy HS	3.0-6.0	(75-150)
Steel, zinc primer:			
1 ct.	Zinc Clad II Plus	3.0-5.0	(75-125)
1-2 cts.	Macropoxy HS	3.0-6.0	(75-150)
Concrete:			
1 ct.	Kem Cati-Coat HS	10.0-20.0	(250-500)
1-2 cts.	Macropoxy HS	3.0-6.0	(75-150)
Aluminum/Galvanized:			
1-2 cts.	Macropoxy HS	3.0-6.0	(75-150)

Other Acceptable Topcoats over Macropoxy if required:

DTM Acrylic Coating
Sherthane 2K Urethane
Acrolon 218 HS Polyurethane

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

DISCLAIMER

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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-SP2
Concrete/Masonry:	SSPC-SP13/NACE 6, or ICRI No. 310.2, CSP 1-3
Aluminum:	SSPC-SP1
Galvanized:	SSPC-SP1

Surface Preparation Standards

	Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal		Sa 3	Sa 3	SP 5	1
Near White Metal		Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast		Sa 2	Sa 2	SP 6	3
Brush-Off Blast		Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	Rusted	C St 2	C St 2	SP 2	-
	Pitted & Rusted	D St 2	D St 2	SP 2	-
Power Tool Cleaning	Rusted	C St 3	C St 3	SP 3	-
	Pitted & Rusted	D St 3	D St 3	SP 3	-

TINTING

Tint with Maxitoners colorants at 150% tint strength into Part A. Five minutes minimum mixing on a mechanical shaker is required for complete mixing of color.

APPLICATION CONDITIONS

Temperature:	50°F (10°C) minimum, 100°F (38°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:	
Parts A & B:	1 gallon (3.78L) and 5 gallon (18.9L) containers
Weight:	11.7 ± 0.2 lb/gal ; 1.4 Kg/L mixed, may vary by 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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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
Minimum surface preparation is Hand Tool Clean per SSPC-SP2. Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. For better performance, use Commercial Blast Cleaning per SSPC-SP6/NACE 3, blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils / 50 microns). Prime any bare steel within 8 hours or before flash rusting occurs.

Concrete and Masonry
For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2, 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.

Aluminum
Remove all oil, grease, dirt, oxide and other foreign material by Solvent Cleaning per SSPC-SP1.

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.

Surface Preparation Standards

	Condition of Surface	ISO 8501-1 BS7079:A1	Swedish Std. SIS055900	SSPC	NACE
White Metal		Sa 3	Sa 3	SP 5	1
Near White Metal		Sa 2.5	Sa 2.5	SP 10	2
Commercial Blast		Sa 2	Sa 2	SP 6	3
Brush-Off Blast		Sa 1	Sa 1	SP 7	4
Hand Tool Cleaning	Rusted	C St 2	C St 2	SP 2	-
	Pitted & Rusted	D St 2	D St 2	SP 2	-
Power Tool Cleaning	Rusted	C St 3	C St 3	SP 3	-
	Pitted & Rusted	D St 3	D St 3	SP 3	-

APPLICATION CONDITIONS

Temperature:	50°F (10°C) minimum, 100°F (38°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 #54 (R7K54) or MEK (R6K10)
In California.....Use Oxsol 100 (exempt solvent)

Airless Spray
Pressure.....2400-2600 psi
Hose.....3/8"-1/2" ID
Tip .....017"-.019"
Filter .....60 mesh
Reduction.....As needed up to 10% by volume

Conventional Spray
Gun .....Binks 95
Fluid Nozzle 68
Air Nozzle.....68 PB
Atomization Pressure.....60 psi
Fluid Pressure.....10-20 psi
Reduction.....As needed up to 10% by volume

Brush
Brush.....Natural Bristle
Reduction.....Not recommended

Roller
Cover .....3/8"-1/2 " woven with solvent resistant core
Reduction.....Not recommended

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

continued on back

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4.51

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mix contents of each component thoroughly with low speed power agitator. Make certain no pigment remains on the bottom of the cans. Then combine one part by volume of Part A with one part by volume of Part B. Thoroughly agitate the mixture with power agitation. Allow the material to sweat-in as indicated. Re-stir before using.

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

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

Recommended Spreading Rate per coat:

	Minimum		Maximum	
Wet mils (microns)	**4.0**	(100)	**8.0**	(200)
Dry mils (microns)	**3.0***	(75)	**6.0***	(150)
~Coverage sq ft/gal (m^2/L)	**215**	(5.2)	**425**	(10.4)
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*See Performance Tips section

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

Drying Schedule @ 6.0 mils wet (150 microns):

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minimum:	24 hours	18 hours	8 hours
maximum:	30 days	30 days	21 days
To cure:	7 days	7 days	5 days

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

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

Pot Life:	6 hours	45 minutes	30 minutes
	N/A	4 hours*	2 hours*

*Reduced 10% with MEK

Sweat-in-time:	30 minutes	15 minutes	5 minutes

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 #54, R7K54. Clean tools immediately after use with Reducer #54, R7K54. 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.

Insufficient ventiliation, incomplete mixing, miscatalyzation, and external heaters may cause premature yellowing.

Excessive film build, poor ventilation, and cool temperatures may cause solvent entrapment and premature coating failure.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer #54, R7K54.

Quik-Kick Epoxy Accelerator is acceptable for use. See data page 4.99 for details.

When coating over aluminum and galvanizing, recommended dft is 2-4 mils (50-100 microns).

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

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