City of Lynchburg
Procurement Division
900 Church Street
Lynchburg, Virginia 24504
Telephone No.: (434) 455-3970
Fax No.: (434) 845-0711

Addendum for Invitation for Bids
Mid-Downtown Parking Deck Painting of Corner Stair

15-932

Date: 08/28/14
From: Lisa Moss, Buyer VCA
RE: Addendum No. 1

This Addendum supplements and amends the original Plans and Specifications and shall be taken into account in preparing proposals and shall become a part of the Contract Documents. The Bidder shall indicate receipt of this Addendum and all previously issued Addenda on the Bid Form.

*Company Name:*_____ *Address:*_____ *Date:*_____

*Authorized Signature:*_____ *Title:*_____

*Print Name:*_____ *Telephone No.:*_____

*Fax No.:*_____

SECTION 09960 - HIGH-PERFORMANCE COATINGS

PART 1 -GENERAL

1.1 SECTION INCLUDES

A. High performance coatings.

1.2 SUBMITTALS

A. Product Data: Provide data indicating coating materials.

1.3 QUALITY ASSURANCE

A. Maintain one copy of each referenced document that applies to application on site.

B. Manufacturer shall provide a written approval of product to be used on existing, previously painted steel substrates. Mock-up will be reviewed by manufacturer's representative and approved prior to continuation of work. This letter will be provided as part of warranty.

C. Applicator Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience.

1.4 MOCK-UP

A. Provide mock-up illustrating coating and sheen, for each specified coating.

B. Locate where directed and will include one landing and run of stair.

C. Mock-up may remain as part of the Work.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Do not install materials when temperature is below 55 degrees F or above 90 degrees F.

B. Maintain this temperature range, 24 hours before, during, and 72 hours after installation of coating.

C. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

D. Restrict traffic from area where coating is being applied or is curing.

1.6 WARRANTY

A. See additional requirements as listed in "Quality Assurance" listed above.

B. Correct defective Work within a five year period after Date of Substantial Completion.

C. Warranty: Include coverage for bond to substrate.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. High-Performance Coatings:

1. Carboline Company: www.carboline.com.
2. PPG Architectural Finishes, Inc: www.ppgaf.com.
3. Sherwin Williams: www.sherwin-williams.com (BASIS OF DESIGN)
3. Tnemec Company, Inc: www.tnemec.com .
4. Wasser: www.wassercoatings.com
5. Substitutions: As approved by architect 7 days prior to date of bid.

2.2 MATERIALS for STEEL Coating

A. Coatings - General: Provide complete multi-coat systems formulated and recommended by manufacturer for the applications indicated, in the thicknesses indicated; number of coats specified does not include primer or filler coat.

C. Multi-coat system: Semi-gloss or gloss (TBD in field mock up) finish. Use system on steel.

1. Primer: MACROPOXY 646 Fast Cure Epoxy.

a. Dry film thickness, per coat: 5.0 - 10.0 Mils

2. Top coat product: Two (2) coats of Hi-Solids Polyurethane. Two component aliphatic acrylic polyurethane resin coating.

   a. Dry film thickness, per coat: 3.0 - 5.0 Mils.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that substrate surfaces are ready to receive work as instructed by the coating manufacturer's representative, field representative/architect for the City. Obtain and follow manufacturer's instructions for examination and testing of substrates.

3.2 PREPARATION

A. Clean surfaces of loose foreign matter.

B. Ferrous Metal:

   1. Solvent clean.
   2. Remove loose rust, loose mill scale, and other foreign substances using power tools and /or sand blasting according to SSPC.

D. Protect adjacent surfaces and materials not receiving coating from overspray; mask if necessary to provide adequate protection. Repair damage.

3.3 PRIMING

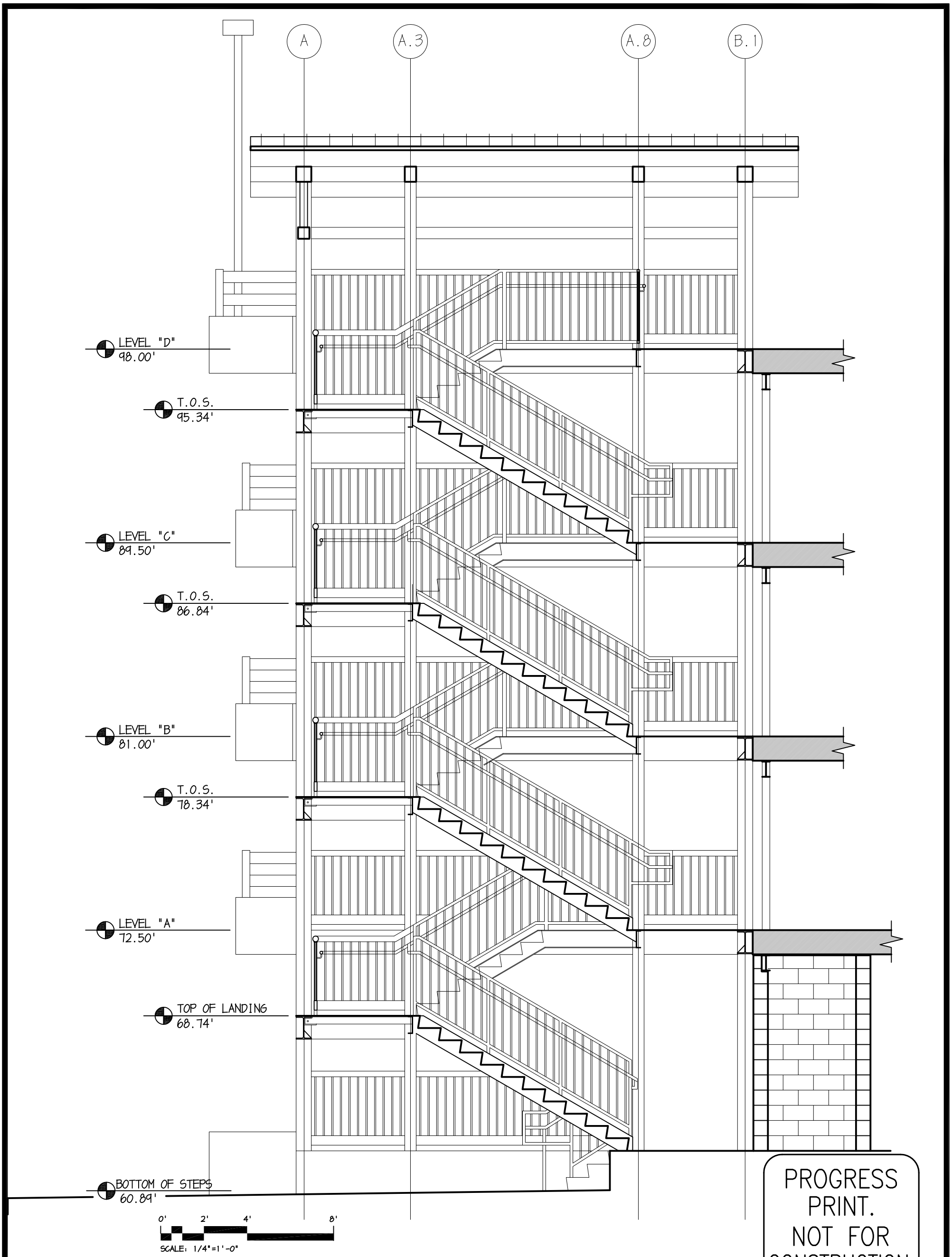
A. Apply primer to all surfaces. Apply in accordance with coating manufacturer's instructions.

3.4 COATING APPLICATION

A. Apply coatings in accordance with manufacturer's instructions, to thicknesses specified.

B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

END OF SECTION



PROGRESS PRINT. NOT FOR CONSTRUCTION

City of Lynchburg
Mid Downtown Parking Deck
Painting of Corner Stair

DATE: 2014/08/25

ARCHITECTURAL PARTNERS
10 9th Street, Lynchburg, Virginia 24504
p:434-846-8456 f:434-846-4534
www.architecturalpartners.com

SCHEDULE

Exterior Finishes

Top Surface of Landing

Patch/Surface: B58W00910 - Steel-Seem FT910 Epoxy Patching And Surfacing Compound Resin - White
Prime Coat: B58W00610 - Macropoxy® 646 Fast Cure Epoxy Part A Mill White
Finish: .01632942 - AS-175 Non-Slip Floor And Deck Coating Beige

All other surfaces

Primer: B58W00610 - Macropoxy® 646 Fast Cure Epoxy Part A Mill White
Coat 1: B65T00304 - Hi-Solids Polyurethane Gloss (Part S) Ultradeep/Clear Tint Base Part S
Coat 2: B65T00304 - Hi-Solids Polyurethane Gloss (Part S) Ultradeep/Clear Tint Base Part S

END OF SECTION

SURFACE PREPARATION

1) Previously Coated Surfaces
Maintenance painting will frequently not permit or require complete removal of all old coatings prior to repainting. However, all surface contamination such as oil, grease, loose paint, mill scale, dirt, foreign matter, rust, mold, mildew, mortar, efflorescence, and sealers must be removed to assure sound bonding to the tightly adhering old paint. Glossy surfaces of old paint films must be clean and dull before repainting. Thorough washing with an abrasive cleanser will clean and dull in one operation, or, wash thoroughly and dull by sanding. Spot prime any bare areas with an appropriate primer. Recognize that any surface preparation short of total removal of the old coating may compromise the service length of the system. Check for compatibility by applying a test patch of the recommended coating system, covering at least 2 to 3 square feet. Allow to dry one week before testing adhesion per ASTM D3359. If the coating system is incompatible, complete removal is required.

2) Power Tool Cleaning to Bare Metal
Metallic surfaces that are prepared according to this specification, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxide corrosion products, and other foreign matter. Slight residues of rust and paint may be left in the lower portions of pits if the original surface is pitted. Prior to power tool surface preparation, remove visible deposits of oil or grease by any of the methods specified in SSPC-SP1, Solvent Cleaning, or other agreed upon methods. For complete instructions, refer to Steel Structures Paint Council Surface Preparation Specification No.11. (SSPC-SP11)

3) Near-White Blast Cleaning
A Near-White Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter, except for staining. Staining shall be limited to no more than 5 percent of each square inch of surface area and may consist of light shadows, slight streaks, or minor discoloration caused by stains of rust, stains of mill scale, or stains of previously applied paint. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods. For complete instructions, refer to Joint Surface Preparation Standard (SSPC-SP10/NACE No. 2)

4) Water Blasting NACE Standard RP-01-72
Removal of oil grease dirt, loose rust, loose mill scale, and loose paint by water at pressures of 2,000 to 2,500 psi at a flow of 4 to 14 gallons per minute.

END OF SPECIFICATION

Data Pages

Protective & Marine Coatings

STEEL-SEAM FT910
EPOXY PATCHING AND SURFACING COMPOUND

PART A	B58W910	RESIN (WHITE)
PART B	B58V910	HARDENER(BLACK)

Revised June 30, 2014

PRODUCT INFORMATION

TRM.67

PRODUCT DESCRIPTION

STEEL-SEAM FT910 EPOXY PATCHING AND SURFACING COMPOUND is a 100% solids epoxy surfacing compound for steel or patching compound for concrete. It is formulated for ease of application with squeegee, trowel, or airless spray on horizontal, vertical or overhead applications. Cures down to 35°F/1.7°C.

- 100% solids
- Tolerates moisture during cure
- Outstanding workability
- Easy to use
- May be applied from 5 mils to 1/2" wft/dft vertically
- May be applied up to 1" thick with aggregate addition
- Cured down to 35°F/1.7°C

PRODUCT CHARACTERISTICS

Color: Gray

Volume Solids: 100%, mixed

VOC (calculated): <100 g/l; 1.67 lb/gal, mixed

Mix Ratio: 3:1 by weight (premeasured kits)

Recommended Spreading Rate:

Coverage:
1" cove ~ 38 lf/gal
3" cove ~ 10 lf/gal
1 mil wft/dft ~ 1604 sf/gal

Drying Schedule @ 40.0 mils wet (1000 microns):

	@ 35°F/1.7°C	@ 73°F/23°C 50% RH
To touch:	6 hours	4 hours
To recoat:		
minimum:	12 hours	6 hours
maximum:	4 days	2 days
To cure:	7 days	7 days

If maximum recoat time is exceeded, abrade surface before recoating. Maximum recoat time is shorter when using polyurea topcoat, refer to topcoat data page.

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

Pot Life*: 50 minutes 30 minutes

*@ 90°F/32°C, Pot Life is 20 minutes

Sweat-in-Time: None

Shelf Life: 36 months, unopened
Store indoors at 40°F (4.5°C) to 100°F (38°C)

Reduction: Not recommended

Clean Up: Reducer R7K54

RECOMMENDED USES

May be used as a versatile filler/surfacer for uneven surfaces found in formed, open or corroded concrete and masonry surfaces. May also be used as a fairing compound for weld seams, riveted connections, lap seams and chine angels in steel tanks prior to epoxy coating and lining applications.

Concrete Uses:
- To smooth rough concrete
- To fill bugholes, tie rod holes, cavities, honeycombs and other surface defects on horizontal, vertical, or overhead surfaces
- To form transition coves at vertical and horizontal coves

Steel Uses:
- To smooth riveted, lapped or welded seams
- To fill corrosion pits on steel surfaces
- To form chine coves and fill sharp angles

PERFORMANCE CHARACTERISTICS

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060	69 mg lost
Adhesion	Concrete, ASTM D4541; Steel, ASTM D1002	350 psi, 100% concrete failure (ASTM D4541); 1,400 psi (ASTM D1002)
Elongation	ASTM D412	17.9%
Flammability	ASTM D635	Self-extinguishing
Hardness, Shore D	ASTM D2240	55-60
Tensile Strength	ASTM D412	2,672 psi
Thermal Cycling	ASTM C884, 5 cycles	No cracking

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Protective & Marine Coatings

STEEL-SEAM FT910
EPOXY PATCHING AND SURFACING COMPOUND

PART A	B58W910	RESIN (WHITE)
PART B	B58V910	HARDENER(BLACK)

Revised June 30, 2014

PRODUCT INFORMATION

TRM.67

RECOMMENDED SYSTEMS

May be applied directly to prepared concrete or steel.

May be applied over 100% solids primers to include:
- Cor-Cote HCR
- Corobond 100
- Dura-Plate UHS Primer
- Macropoxy 920 PrePrime
- Corobond LT
- EnviroLastic LT

May be topcoated with a variety of coatings to include:
- Acrolon 218 HS
- Cor-Cote HCR, HCR FF
- Cor-Cote E.N. 7000
- Cor-Cote HP, HP FF
- Cor-Cote SC-Sewer-Cote
- Dura-Plate 235
- Dura-Plate UHS Laminate
- Dura-Plate UHS Epoxy
- EnviroLastic Polyurea
- Macropoxy 646 Epoxy
- Phenicon HS Epoxy
- SherFlex
- ExpressCote HCR

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 SP-10/NACE2, 3 mils (75 microns) profile
Concrete:	SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 4-6

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

Do not tint.

APPLICATION CONDITIONS

Temperature:

Air and Surface:	35°F (1.7°C) minimum, 120°F (49°C) maximum
Material:	50°F (10°C) minimum, 95°F (35°C) maximum 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:

Part A:	13.2 lb / 1.6 Kg/L (~1.5 gal / 5.6L) in a 3 gallon (11.3L) pail
Part B:	4.4 lb / 0.53 Kg/L (~.5 gal / 1.9L) in a 1 gallon (3.78L) pail
Weight per mixed unit:	17.5 lbs. ; 2.1 Kg/L (462 cu. in.)

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.

Protective & Marine Coatings

STEEL-SEAM FT910
EPOXY PATCHING AND SURFACING COMPOUND

PART A	B58W910	RESIN (WHITE)
PART B	B58V910	HARDENER(BLACK)

Revised June 30, 2014

APPLICATION BULLETIN

TRM.67

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 (immersion service)
Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (3 mils / 75 microns). Remove all weld spatter and round all sharp edges by grinding. Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Iron & Steel (atmospheric service)
Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is 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.

Concrete and Masonry
For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 4-6. 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.

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.

Concrete, Immersion Service:
For surface preparation, refer to SSPC-SP13/NACE 6, Section 4.3.1 or 1.3.2 or ICRI No. 310.2R, CSP 2-3.

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:	
Air and Surface:	35°F (1.7°C) minimum, 120°F (49°C) maximum
Material:	50°F (10°C) minimum, 95°F (35°C) maximum 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.

Reduction .....Not recommended

Cleanup .....Reducer R7K54

Squeegee:
Squeegee.....Flat

Trowel:
Trowel .....Flat blade
For applications over severely damaged or eroded concrete, use a rubber faced grout float trowel.

Putty Knife .....Acceptable

Airless Spray
Pump .....45:1 (minimum) with gravity feed hopper connected to a high volume lower unit (minimum 220 cc/cycle)
Pressure .....2400-3000 psi
Hose .....3/8" ID, with ¼" whip hose acceptable
Tip.....019 - .031
Gun.....Graco Silver Plus, XTR, or Pistol Grip Mastic
Filter(s) .....remove
Reduction .....not recommended

Have material agitated with lids open to ensure rapid mixing. Multiple passes will allow film thickness up to 250 mils. An orange peel appearance is normal. If a smoother finished is desired, 1-2 hours after application use a 1/8" nap roller dampened with R7K54 to smooth the surface. Use a large spatula to continually wipe the material down into the hopper.

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

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Protective & Marine Coatings

STEEL-SEAM FT910
EPOXY PATCHING AND SURFACING COMPOUND

PART A	B58W910	RESIN (WHITE)
PART B	B58V910	HARDENER(BLACK)

Revised June 30, 2014

APPLICATION BULLETIN

TRM.67

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mixing Instructions: Stir each component with low speed power agitation prior to mixing. Mix 3 parts Part A (white) to 1 part Part B (black) by weight (premeasured components). Mix with low speed drill and Jiffy Mixer for approximately three minutes until uniform gray with no white or black streaks.

Temperature:
Do not apply product when ambient or surface temperatures are below 35°F (1.7°C). Surface temperature must be at least 5°F (2.8°C) above dew point.

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

Recommended Spreading Rate:

Coverage:	1" cove ~ 38 lf/gal
	3" cove ~ 10 lf/gal
	1 mil wft/dft ~ 1604 sf/gal

Drying Schedule @ 40.0 mils wet (1000 microns):

	@ 35°F/1.7°C	@ 73°F/23°C 50% RH
To touch:	6 hours	4 hours
To recoat:		
minimum:	12 hours	6 hours
maximum:	4 days	2 days
To cure:	7 days	7 days

If maximum recoat time is exceeded, abrade surface before recoating.
Maximum recoat time is shorter when using polyurea topcoat, refer to topcoat data page.
Hardening time is temperature, humidity, and film thickness dependent.

Pot Life*:	50 minutes	30 minutes

*@ 90°F/32°C, Pot Life is 20 minutes

Sweat-in-Time: None

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 R7K54. Clean tools immediately after use with Reducer R7K54. Follow manufacturer's safety recommendations when using any solvent.

DISCLAIMER

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PERFORMANCE TIPS

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.

No reduction of material is recommended as it can affect film build, appearance, and adhesion.

Do not mix previously catalyzed material with new.

Do not apply the material beyond recommended pot life.

Check surfaces of primer, FT910, and subsequent coats for amine blush (oily film). If detected, remove before applying the next layer or coat.

For filling larger defects in concrete, one to four quarts of 30 to 100 mesh aggregate may be added per gallon of mixed FT910, depending on the size of hole and slump required.

Ambient air cured FT910 is acceptable for use on interior of potable water storage tanks and reservoirs when overcoated with an ANSI / NSF Std. 61 certified Sherwin-Williams coating.

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

SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

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WARRANTY

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Protective & Marine Coatings

MACROPOXY® 646 FAST CURE EPOXY

PART A B58-600 **SERIES**
PART B B58V600 **HARDENER**

Revised: December 2, 2013

PRODUCT INFORMATION

4.53

PRODUCT DESCRIPTION

MACROPOXY 646 FAST CURE EPOXY is a high solids, high build, fast drying, polyamide epoxy designed to protect steel and concrete in industrial exposures. Ideal for maintenance painting and fabrication shop applications. The high solids content ensures adequate protection of sharp edges, corners, and welds. This product can be applied directly to marginally prepared steel surfaces.

- Low VOC
- Low odor
- Chemical resistant
- Abrasion resistant
- Outstanding application properties
- Meets Class A requirements for Slip Coefficient, 0.36 @ 6 mils / 150 microns dft (Mill White only)

PRODUCT CHARACTERISTICS

Finish:	Semi-Gloss
Color:	Mill White, Black and a wide range of colors available through tinting
Volume Solids:	72% ± 2%, mixed, Mill White
Weight Solids:	85% ± 2%, mixed, Mill White
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)	**7.0** (175)	**13.5** (338)
Dry mils (microns)	**5.0*** (125)	**10.0*** (250)
~Coverage sq ft/gal (m^2/L)	**116** (2.8)	**232** (5.7)
Theoretical coverage **sq ft/gal** (m^2/L) @ 1 mil / 25 microns dft	**1152** (28.2)	

***May be applied at 3.0-10.0 mils (75-250 microns) dft as an intermediate coat in a multi-coat system. Refer to Recommended Systems (page 2). See Performance Tips section also.**

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

Drying Schedule @ 7.0 mils wet (175 microns):

	@ 35°F/1.7°C	@ 77°F/25°C *50% RH*	@ 100°F/38°C
To touch:	4-5 hours	2 hours	1.5 hours
To handle:	48 hours	8 hours	4.5 hours
To recoat:			
minimum:	48 hours	8 hours	4.5 hours
maximum:	1 year	1 year	1 year
To cure:			
Service:	10 days	7 days	4 days
Immersion:	14 days	7 days	4 days
Pot Life:	10 hours	4 hours	2 hours
Sweat-in-time:	30 minutes	30 minutes	15 minutes

If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent.
Paint temperature must be at least 40°F (4.5°C) minimum.

When used as an intermediate coat as part of a multi-coat system:

Drying Schedule @ 5.0 mils wet (125 microns):

	@ 35°F/1.7°C	@ 77°F/25°C *50% RH*	@ 100°F/38°C
To touch:	3 hours	1 hour	1 hour
To handle:	48 hours	4 hours	2 hours
To recoat:			
minimum:	16 hours	4 hours	2 hours
maximum:	1 year	1 year	1 year

PRODUCT CHARACTERISTICS (CONT'D)

Shelf Life:	36 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C).
Flash Point:	91°F (33°C), TCC, mixed
Reducer/Clean Up:	Reducer, R7K15
In California:	Reducer R7K111 or Oxsol 100

PERFORMANCE CHARACTERISTICS

Substrate*: Steel
Surface Preparation*: SSPC-SP10/NACE 2
System Tested*:
1 ct. Macropoxy 646 Fast Cure @ 6.0 mils (150 microns) dft
*unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	84 mg loss
Accelerated Weathering-QUV[1]	ASTM D4587, QUV-A, 12,000 hours	Passes
Adhesion	ASTM D4541	1,037 psi
Corrosion Weathering[1]	ASTM D5894, 36 cycles, 12,000 hours	Rating 10 per ASTM D714 for blistering; Rating 9 per ASTM D610 per rusting
Nuclear Decontamination	ASTM D4256/ANSI N 5.12	99% Water Wash; 95% Overall
Direct Impact Resistance[2]	ASTM D2794	120 in. lb.
Dry Heat Resistance	ASTM D2485	250°F (121°C)
Exterior Durability	1 year at 45° South	Excellent, chalks
Flexibility	ASTM D522, 180° bend, 3/4" mandrel	Passes
Fuel Contribution	NFPA 259	5764 btu/lb
Humidity Resistance	ASTM D4585, 6000 hours	No blistering, cracking, or rusting
Immersion	1 year fresh and salt water	Passes, no rusting, blistering, or loss of adhesion
Radiation Tolerance	ASTM D4082 / ANSI 5.12	Pass at 21 mils (525 microns)
Pencil Hardness	ASTM D3363	3H
Salt Fog Resistance[1]	ASTM B117, 6,500 hours	Rating 10 per ASTM D610 for rusting; Rating 9 per ASTM D1654 for corrosion
Slip Coefficient, Mill White*	AISC Specification for Structural Joints Using ASTM A325 or ASTM A490 Bolts	Class A, 0.36
Surface Burning	ASTM E84/NFPA 255	Flame Spread Index 20; Smoke Development Index 35 (at 18 mils or 450 microns)
Water Vapor Permeance	ASTM D1653, Method B	1.16 US perms

Epoxy coatings may darken or discolor following application and curing.

*Refer to Slip Certification document

Footnotes:
[1] Zinc Clad II Plus Primer
[2] Two coats of Macropoxy 646

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.

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Protective & Marine Coatings

MACROPOXY® 646 FAST CURE EPOXY

PART A	B58-600	SERIES
PART B	B58V600	HARDENER

PRODUCT INFORMATION

4.53

RECOMMENDED USES

- Marine applications
- Fabrication shops
- Pulp and paper mills
- Power plants
- Offshore platforms
- Nuclear Power Plants
- Nuclear fabrication shops
- Refineries
- Chemical plants
- Tank exteriors
- Water treatment plants
- DOE Nuclear Fuel Facilities
- DOE Nuclear Weapons Facilities
- Mill White and Black are acceptable for immersion use for salt water and fresh water, not acceptable for potable water
- Suitable for use in USDA inspected facilities
- Conforms to AWWA D102 OCS #5
- Conforms to MPI # 108
- This product meets specific design requirements for non-safety related nuclear plant applications in Level II, III and Balance of Plant, and DOE nuclear facilities*.

* Nuclear qualifications are NRC license specific to the facility.

- Suitable for use in the Mining & Minerals Industry

RECOMMENDED SYSTEMS

		Dry Film Thickness / ct. Mils	(Microns)
Immersion and atmospheric:			
Steel:			
2 cts.	Macropoxy 646	5.0-10.0	(125-250)
Concrete/Masonry, smooth:			
2 cts.	Macropoxy 646	5.0-10.0	(125-250)
Concrete Block:			
1 ct.	Kem Cati-Coat HS Epoxy Filler/Sealer *as needed to fill voids and provide a continuous substrate.*	10.0-20.0	(250-500)
2 cts.	Macropoxy 646	5.0-10.0	(125-250)
Atmospheric:			
Steel: (Shop applied system, new construction, AWWA D102, can also be used at 3 mils / 75 microns minimum dft when used as an intermediate coat as part of a multi-coat system)			
1 ct.	Macropoxy 646 Fast Cure Epoxy	3.0-6.0	(75-150)
1-2 cts.	of recommended topcoat		
Steel:			
1 ct.	Recoatable Epoxy Primer	4.0-6.0	(100-150)
2 cts.	Macropoxy 646	5.0-10.0	(125-250)
Steel:			
1 ct.	Macropoxy 646	5.0-10.0	(125-250)
1-2 cts.	Acrolon 218 Polyurethane	3.0-6.0	(75-150)
or	Hi-Solids Polyurethane	3.0-5.0	(75-125)
or	SherThane 2K Urethane	2.0-4.0	(50-100)
or	Hydrogloss	2.0-4.0	(50-100)
Steel:			
2 cts.	Macropoxy 646	5.0-10.0	(125-250)
1-2 cts.	Tile-Clad HS Epoxy	2.5-4.0	(63-100)
Steel:			
1 ct.	Zinc Clad II Plus	2.0-4.0	(50-100)
1 ct.	Macropoxy 646	5.0-10.0	(125-250)
1-2 cts.	Acrolon 218 Polyurethane	3.0-6.0	(75-150)
Steel:			
1 ct.	Zinc Clad III HS	3.0-5.0	(75-125)
or	Zinc Clad IV	3.0-5.0	(75-125)
1 ct.	Macropoxy 646	3.0-10.0	(75-250)
1-2 cts.	Acrolon 218 Polyurethane	3.0-6.0	(75-150)
Aluminum:			
2 cts.	Macropoxy 646	5.0-10.0	(125-250)
Galvanizing:			
2 cts.	Macropoxy 646	5.0-10.0	(125-250)
FIRETEX ONLY:			
Steel & Galvanized Substrates being primed for FIRETEX only:			
1 ct.	Macropoxy 646	2.0-5.0	(50-125)

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

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

Atmospheric:	SSPC-SP2/3
Immersion:	SSPC-SP10/NACE 2, 2-3 mil (50-75 micron) profile
Aluminum:	SSPC-SP1
Galvanizing:	SSPC-SP1; See Surface Preparations section on page 3 for application of FIRETEX intumescent coating systems

Concrete & Masonry

Atmospheric:	SSPC-SP13/NACE 6, or ICRI No. 310.2, CSP 1-3
Immersion:	SSPC-SP13/NACE 6-4.3.1 or 4.3.2, or ICRI No. 310.2, CSP 2-4

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

Tinting is not recommended for immersion service.

APPLICATION CONDITIONS

Temperature:	35°F (1.7°C) minimum, 120°F (49°C) maximum (air and surface) 40°F (4.5°C) minimum, 120°F (49°C) maximum (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:	
Part A:	1 gallon (3.78L) and 5 gallon (18.9L) containers
Part B:	1 gallon (3.78L) and 5 gallon (18.9L) containers
Weight:	12.9 ± 0.2 lb/gal ; 1.55 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.

Protective & Marine Coatings

MACROPOXY® 646 FAST CURE EPOXY

PART A B58-600 SERIES
PART B B58V600 HARDENER

Revised: December 2, 2013

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, Atmospheric Service:
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.

Iron & Steel, Immersion Service:
Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2-3 mils / 50-75 microns). Remove all weld spatter and round all sharp edges by grinding. Prime any bare steel the same day as it is cleaned.

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. Solvent Clean per SSPC-SP1 (recommended solvent is VM&P Naphtha). 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.
In preparing galvanized steel substrates for the application of FIRETEX intumescent coating systems, Surface Preparation Specification SSPC-SP 16 must be followed obtaining a surface profile of minimum 1.5 mils (38 microns). Optimum surface profile will not exceed 2.0 mils (50 microns).

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.

Concrete, Immersion Service:
For surface preparation, refer to SSPC-SP13/NACE 6, Section 4.3.1 or 1.3.2 or ICRI No. 310.2, CSP 2-4.

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. 310.2 Concrete Surface Preparation.

Previously Painted Surfaces
If in sound condition, clean the surface of all foreign material. Smooth, hard or glossy coatings and surfaces should be dulled by abrading the surface. Apply a test area, allowing paint to dry one week before testing adhesion. If adhesion is poor, or if this product attacks the previous finish, removal of the previous coating may be necessary. If paint is peeling or badly weathered, clean surface to sound substrate and treat as a new surface as above.

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:	35°F (1.7°C) minimum, 120°F (49°C) maximum (air and surface) 40°F (4.5°C) minimum, 120°F (49°C) maximum (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 R7K15
In California..... Reducer R7K111

Airless Spray
Pump..... 30:1
Pressure..... 2800 - 3000 psi
Hose..... 1/4" ID
Tip ..... .017" - .023"
Filter..... 60 mesh
Reduction..... As needed up to 10% by volume

Conventional Spray
Gun ..... DeVilbiss MBC-510
Fluid Tip ..... E
Air Nozzle..... 704
Atomization Pressure..... 60-65 psi
Fluid Pressure..... 10-20 psi
Reduction..... As needed up to 10% by volume
Requires oil and moisture separators

Brush
Brush..... Nylon/Polyester or Natural Bristle
Reduction..... Not recommended

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

Plural Component Spray ... Acceptable
Refer to April 2010 Technical Bulletin - "Application Guidelines for Macropoxy 646 & Recoatable Epoxy Primer Utilizing Plural Component Equipment"

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

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Protective & Marine Coatings

MACROPOXY® 646 FAST CURE EPOXY

PART A	B58-600	SERIES
PART B	B58V600	HARDENER

APPLICATION BULLETIN

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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 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 prior to application. 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)	**7.0** (175)	**13.5** (338)
Dry mils (microns)	**5.0*** (125)	**10.0*** (250)
~Coverage sq ft/gal (m^2/L)	**116** (2.8)	**232** (5.7)
Theoretical coverage **sq ft/gal** (m^2/L) @ 1 mil / 25 microns dft	**1152** (28.2)	

***May be applied at 3.0-10.0 mils (75-250 microns) dft in atmospheric conditions. Refer to Recommended Systems (page 2). See Performance Tips section also.**

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

Drying Schedule @ 7.0 mils wet (175 microns):

	@ 35°F/1.7°C	@ 77°F/25°C *50% RH*	@ 100°F/38°C
To touch:	4-5 hours	2 hours	1.5 hours
To handle:	48 hours	8 hours	4.5 hours
To recoat:			
minimum:	48 hours	8 hours	4.5 hours
maximum:	1 year	1 year	1 year
To cure:			
Service:	10 days	7 days	4 days
Immersion:	14 days	7 days	4 days

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

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

Paint temperature must be at least 40°F (4.5°C) minimum.

Pot Life:	10 hours	4 hours	2 hours
Sweat-in-time:	30 minutes	30 minutes	15 minutes

When used as an intermediate coat as part of a multi-coat system:

Drying Schedule @ 5.0 mils wet (125 microns):

	@ 35°F/1.7°C	@ 77°F/25°C *50% RH*	@ 100°F/38°C
To touch:	3 hours	1 hour	1 hour
To handle:	48 hours	4 hours	2 hours
To recoat:			
minimum:	16 hours	4 hours	2 hours
maximum:	1 year	1 year	1 year

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 R7K15. Clean tools immediately after use with Reducer R7K15. In California use Reducer R7K111. Follow manufacturer's safety recommendations when using any solvent.

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 mix previously catalyzed material with new.

Do not apply the material beyond recommended pot life.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer R7K15. In California use Reducer R7K111.

Tinting is not recommended for immersion service.

Use only Mil White and Black for immersion service.

Insufficient ventilation, 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.

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).

Acceptable for Concrete Floors.

Can be used as a metalizing sealer. Consult Technical Bulletin - Sealers for Thermal Spray Metalizing, or your local Sherwin-Williams representative.

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

SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

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WARRANTY

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AMERICAN SAFETY TECHNOLOGIES

TECHNICAL DATA SHEET

AS-175

NON-SLIP FLOOR AND DECK COATING

DESCRIPTION

AS-175 is a two-part coating which combines water-borne epoxy resins and tough, fine grained abrasives to produce a self-sealing, non-slip floor and deck coating. Enhanced cleanability, chemical resistance and coverage are but a few of the reasons AS-175 is the first choice for low-profile applications.

AS-175 is fire retardant in the cured state and is ideal for recreation areas as well as industrial and institutional facilities where use of a water-based coating is desirable. Refer to ITW-American Safety Technologies Chemical Resistance Table for detailed performance data.

SURFACE PREPARATION

AS-175 should be applied to clean surfaces only. Remove all paint, rust and mill scale preferably by grit-blasting and prime metals with MS-5C Primer. Remove oil, grease, dirt, wax, etc. by dissolving in a water based cleaner/degreaser.

The surface should be totally neutral for application. Porous surfaces such as concrete and wood should be primed with PS-100 W.B. Primer/Sealer to seal the surface. Surfaces may be damp for coating but must be free of standing water. When the surface is dry enough so that masking tape will adhere, it is ready to be coated.

Non-porous, glazed surfaces such as fiberglass or ceramic tile should be lightly roughened for better mechanical bonding. Metal surfaces exposed to moisture should be grit-blasted and then primed. Consult Surface Preparation Sheets from ITW-American Safety Technologies for more detailed preparation procedures.

APPLICATION

AS-175 is designed to be applied over a primer or sealer.
1. Pre-mix base component with a mechanical mixer such as a pneumatic drill motor with a Jiffy mixing blade. Make sure all settlement is lifted off bottom of the container and is uniformly dispersed in the material.
2. Pour entire contents of hardener can into base material. Mix hardener and base material with a mechanical mixer such as a pneumatic drill motor with a Jiffy mixing blade for approximately 3-5 minutes or until mixed material assumes a uniform color and appearance. Apply material immediately. No induction time is required.
3. Working pot life is approximately 1 hour at 70°F. Pot life is increased at lower temperatures and decreased at higher temperatures.
4. AS-175 can be applied at surface temperatures between 50°F and 130°F. Application is not recommended when surface temperature is above 130°F or below 50°F. Below 50°F, curing time will increase substantially.
5. AS-175 can be applied by roller or spray equipment but is normally applied by rolling.

APPLICATION TECHNIQUES

SPRAY
Sprayed applications will result in a uniform appearance with good non-slip characteristics.
1. AS-175 should not be thinned. Thinning could result in grit not remaining properly in suspension.
2. Specialized mastic type spray equipment is required. A recommended set-up is as follows:
a. A 5-gallon bottom outlet pressure tank equipped with a double regulator and an air driven agitator, and 1” I.D. outlet pipe.

565 EAGLE ROCK AVENUE
ROSELAND, NEW JERSEY
07068
PHONE: 800-631-7841
973-403-2600
FAX: 973-403-1108

b. 25 feet of 3/8“ air hose with 3/8“ female connectors at each end.
c. 25 feet of 3/4“ material hose with 3/4“ female connectors at each end.
d. A Binks Model 7E2 spray gun equipped with 1/4“ (#45) fluid nozzle and a 1/4“ internal air cap or a Binks Model 52-2012 (4 foot) pole gun equipped with the same fluid nozzle and air nozzle.
3. Minimum air supply required is 20 CFM at 90 lbs. pressure. Recommended pressure is 15-20 PSI on material and 20-25 PSI on atomization. Always keep atomization air pressure higher than pot pressure. Keep agitators running slowly. Good coverage and film thickness will be obtained working at 18“ or 24“ distance from surface. Overlap strokes about 50%. Make sure of wet application. Very little abrasive rebound will be noticed at 15 PSI; however, it will be more noticeable at higher pressure.
4. When temperature is above 80°F, it is advisable to flush the spray equipment with water every hour or so in order to prevent the possibility of any material setting up and plugging the equipment.

ROLLER

Rolled applications provide the most aggressive non-slip characteristics with an irregular, ridged profile.
1. Use a phenolic roller available from ITW-American Safety Technologies. It is important that the rolled profile expose the maximum amount of non-slip aggregate. If aggregate is not properly exposed, the coating may become slippery when wet.
2. Pour a “ribbon” of **AS-175** on the surface approximately 2’ long and 6” wide. Roll material in one direction only, in slow straight strokes pulling material toward you with a moderate amount of pressure. Do not over-roll too many times or press down too heavily. Be careful that material does not build up too thickly along welds (roll across welds, not along them). Material applied too thickly may not properly cure.
3. Higher temperatures will shorten drying time and conversely, lower temperature and high relative humidity will lengthen drying time. Exterior applications must be protected from rain for at least 12 to 24 hours after application according to humidity. Protect from heavy or extended exposure to water, oil and chemicals for 5 to 7 days.

SURFACE MAINTENANCE

Maintain a clean surface to ensure that the non-slip safety performance of **AS-175** be maximized. We recommend the following cleaning procedure:
a. Apply LPS Precision Clean, an all purpose, biodegradable cleaner/degreaser; mixed at 1:4 ratio with water to the surface.
b. Scrub surface with a long-handled, fiber bristled brush or floor machine.
c. Rinse with clean water and dry. Foreign matter such as chewing gum should be removed with a scraper or putty knife and then surface should be cleaned following above procedure.
Although extremely durable, **AS-175** is not a permanent coating and will require occasional touch up, especially in heavy traffic areas.

SPECIFICATIONS

VOC: 0.5 lbs. per gallon (60 grams/liter)
VOLUME SOLIDS (%) : 63%
POT LIFE: 1 hour @ 70°F (21°C)
DRY TIME: Light Traffic - 24 hours @ 70°F (21°C)
Heavy Traffic - 72 hours @ 70°F (21°C)
ESTIMATED COVERAGE: 90 sq. ft. per gallon – roller
120 sq. ft. per gallon - spray
WEIGHT PER GALLON: 12.2 lbs. per gallon
(1.47 kg/liter)
FLASH POINT : N/A
COEFFICIENT OF FRICTION ASTM F609:
Dry - 0.78
Wet - 0.86

COLORS AND TINTING: Black, Light Gray, Tile Red, Safety Yellow, Beige, White Tint Base and Neutral Tint Base

Use approved tinting system and pigments when adding colorants. The white tint base should receive no more than 8 fluid oz. of tint and the neutral base 12 fluid oz. High amounts of colorants can affect viscosity, cure time and ultimate strength of the product.
After colorant has been added, material must be shaken for a minimum of 5 minutes to blend in pigment. Some color separation may be apparent until the converter is added. Premixing with a drill prior to application is also recommended. A test area should be applied so color and appearance can be verified. Deep colors may require additional coats to hide.

PACKAGING: 1 gallon kits

CAUTION
Read Material Safety Data Sheet before using this material.
Contains Solvent. Use only with adequate cross ventilation. Keep away from extreme heat, sparks and open flame. Avoid prolonged breathing of vapors. For dizziness, seek fresh air. Toxic material. Avoid contact with skin. Use gloves, goggles and coveralls. In case of spillage on clothing, change clothing to prevent prolonged contact with skin. Wash contaminated clothing before reuse. Discard contaminated shoes. In case of accidental contact with skin, wash immediately with soap and water. In case of eye contact, flush thoroughly with plenty of water and call physician. If swallowed accidentally, do not induce vomiting. Seek medical attention immediately.

Protective & Marine Coatings

HI-SOLIDS POLYURETHANE

PART S	B65-300	GLOSS SERIES
PART S	B65-350	SEMI-GLOSS SERIES
PART S	B65WW305	MR, WHITE TINT BASE (GLOSS)
PART T	B60V30	HARDENER

Revised: June 5, 2013

PRODUCT INFORMATION

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PRODUCT DESCRIPTION

HI-SOLIDS POLYURETHANE is a two-component, low VOC, aliphatic, acrylic polyurethane resin coating. 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
- Part of a system tested for nuclear irradiation and decontamination, Level II
- Resists film attack by mildew (MR White only)
- Outstanding application properties

PRODUCT CHARACTERISTICS

Finish:	High Gloss or Semi-Gloss
Color:	Wide range of colors possible
Volume Solids:	65% ± 2%, mixed, may vary by color
Weight Solids:	77% ± 2%, mixed, may vary by color
VOC (EPA Method 24):	Unreduced: <340g/L; 2.80 lb/gal mixed Reduced 15%: <370 g/L; 3.08 lb/gal May vary by color
Mix Ratio:	4:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	**4.5** (112)	**8.0** (200)
Dry mils (microns)	**3.0** (75)	**5.0** (125)
~Coverage sq ft/gal (m^2/L)	**208** (5.1)	**347** (8.5)
Theoretical coverage sq ft/gal (m^2/L) @ 1 mil / 25 microns dft	**1040** (25.5)	

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

Drying Schedule @ 4.5 mils wet (112 microns):

	@ 40°F/4.5°C	@ 77°F/25°C *50% RH*	@ 120°F/49°C
To touch:	4 hours	2 hours	1 hour
To handle:	16 hours	8 hours	5 hours
To recoat:			
minimum	24 hours	18 hours	10 hours
maximum	14 days	14 days	14 days
To cure:	14 days	10 days	7 days
Pot Life:	8 hours	4 hours	2 hours
Sweat-in-Time:		None required	

If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent.

Shelf Life:	Part S - 36 months, unopened Part T - 24 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C).
Flash Point:	80°F (27°C), PMCC, mixed
Reducer/Clean Up: Below 80°F (27°C): Above 80°F (27°C):	 Reducer #69, R7K69 or R7K111 Reducer #58, R7K58 or R6K32

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 • Refineries • Clean rooms
- Chemical processing equipment • Conveyors • Handrails
- Marine & Offshore Applications • Power Plants
- Resists film attack by mildew (MR White only)
- Suitable for use in USDA inspected facilities
- Conforms to AWWA D102 OCS #5 & #6.
- Acceptable for use in high performance architectural applications
- As topcoat for NEPCOAT System A
- Over FIRETEX hydrocarbon systems

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP6/NACE 3

System Tested*:

1 ct. Recoatable Epoxy Primer @ 4.0 mils (100 microns) dft
1 ct. Hi-Solids Polyurethane Gloss @ 3.0 mils (75 microns) dft

*unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	87.1 mg loss
Adhesion	ASTM D4541	1050 psi
Corrosion Weathering[1]	ASTM D5894, 21 cycles, 7056 hours	Rating 10 per ASTM D714 for blistering; Rating 9 per ASTM D610 for rusting
Direct Impact Resistance	ASTM D2794	>28 in. lbs.
Dry Heat Resistance	ASTM D2485	200°F (93°C)
Flexibility	ASTM D522, 180° bend, 1/8" mandrel	Passes
Moisture Condensation Resistance	ASTM D4585, 100°F (38°C), 1000 hours	No rusting, blistering, or delamination
Pencil Hardness	ASTM D3363	F
Salt Fog Resistance[1]	ASTM B117, 9000 hours	Rating 10 per ASTM D714 for blistering; Rating 9 per ASTM D610 for rusting
Surface Burning	ASTM E84	Flame Spread Index 0; Smoke Development Index 0 (at 3.5 mils or 88 microns)
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.

Footnotes:

[1] Primer: Zinc Clad II Plus; Intermediate - Recoatable Epoxy Primer

continued on back

Protective & Marine Coatings

HI-SOLIDS POLYURETHANE

PART S	B65-300	GLOSS SERIES
PART S	B65-350	SEMI-GLOSS SERIES
PART S	B65WW305	MR, WHITE TINT BASE (GLOSS)
PART T	B60V30	HARDENER

PRODUCT INFORMATION

5.21

RECOMMENDED SYSTEMS

		Dry Film Thickness / ct. Mils	(Microns)
Steel: Epoxy Primer			
1 ct.	Recoatable Epoxy Primer	4.0-6.0	(100-150)
1-2 cts.	Hi-Solids Polyurethane	3.0-5.0	(75-125)
Steel: Epoxy Primer			
1 ct.	Dura-Plate 235	4.0-8.0	(100-200)
1-2 cts.	Hi-Solids Polyurethane	3.0-5.0	(75-125)
Steel: Zinc Rich Primer			
1 ct.	Zinc Clad II Plus	2.0-4.0	(50-100)
1 ct.	Macropoxy 646	5.0-10.0	(125-250)
1-2 cts.	Hi-Solids Polyurethane	3.0-5.0	(75-125)
Steel: Epoxy Mastic Primer			
1 ct.	Macropoxy 646	5.0-10.0	(125-250)
1-2 cts.	Hi-Solids Polyurethane	3.0-5.0	(75-125)
Steel: Universal Primer			
1 ct.	Kem Bond HS Metal	2.0-5.0	(50-125)
1-2 cts.	Hi-Solids Polyurethane	3.0-5.0	(75-125)
Steel: NEPCOAT			
1 ct.	Zinc Clad DOT	2.0-4.0	(50-100)
1 ct.	Steel Spec Epoxy Intermediate	3.0-6.0	(75-150)
1 ct.	Hi-Solids Polyurethane	3.0-5.0	(75-125)
Aluminum:			
1 ct.	DTM Wash Primer	0.7-1.3	(18-32)
1-2 cts.	Hi-Solids Polyurethane	3.0-5.0	(75-125)
Concrete:			
1 ct.	Kem Cati-Coat Epoxy HS Filler/Sealer	10.0-15.0	(250-375)
1-2 cts.	Hi-Solids Polyurethane	3.0-5.0	(75-125)
Galvanized Metal:			
1 ct.	Recoatable Epoxy Primer	4.0-6.0	(100-150)
1-2 cts.	Hi-Solids Polyurethane	3.0-5.0	(75-125)

FIRETEX ONLY:

Finish Coat for FIRETEX Hydrocarbon Systems:

1 ct. Hi-Solids Polyurethane*

*Consult FIRETEX PFP Specialist for recommended dft range

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

* Primer Required

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 Maxitoner Colorants only into Part S. Extra White tints at 200% tint strength. Ultradeep tints at 150% tint strength. Five minutes minimum mixing on a mechanical shaker is required for complete mixing of color.

APPLICATION CONDITIONS

Temperature:	35°F (1.7°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:

Part S:	1 gallon (3.78L) and 4 gallon (15.1L) kits
Part T:	quarts (0.94L) and gallons (3.78L)
Weight:	10.7 ± 0.2 lb/gal ; 1.28 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.

Protective & Marine Coatings

HI-SOLIDS POLYURETHANE

PART S	B65-300	GLOSS SERIES
PART S	B65-350	SEMI-GLOSS SERIES
PART S	B65WW305	MR, WHITE TINT BASE (GLOSS)
PART T	B60V30	HARDENER

Revised: June 5, 2013

APPLICATION BULLETIN

5.21

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.

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

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. 310.2, 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. 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. 310.2 Concrete Surface Preparation.

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:	35°F (1.7°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
Below 80°F (27°C) .....Reducer #69, R7K69 or R7K111
Above 80°F (27°C).....Reducer #58, R7K58 or R6K32

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.

continued on back

Protective & Marine Coatings

HI-SOLIDS POLYURETHANE

PART S	B65-300	GLOSS SERIES
PART S	B65-350	SEMI-GLOSS SERIES
PART S	B65WW305	MR, WHITE TINT BASE (GLOSS)
PART T	B60V30	HARDENER

APPLICATION BULLETIN

5.21

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 4 parts by volume of Part S with 1 part by volume of Part T. 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)	**4.5** (112)	**8.0** (200)
Dry mils (microns)	**3.0** (75)	**5.0** (125)
~Coverage sq ft/gal (m^2/L)	**208** (5.1)	**347** (8.5)
Theoretical coverage sq ft/gal (m^2/L) @ 1 mil / 25 microns dft	**1040** (25.5)	

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

Drying Schedule @ 4.5 mils wet (112 microns):

	@ 40°F/4.5°C	@ 77°F/25°C *50% RH*	@ 120°F/49°C
To touch:	4 hours	2 hours	1 hour
To handle:	16 hours	8 hours	5 hours
To recoat:			
minimum	24 hours	18 hours	10 hours
maximum	14 days	14 days	14 days
To cure:	14 days	10 days	7 days
Pot Life:	8 hours	4 hours	2 hours
Sweat-in-Time:		None required	

If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent.

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 #58, R7K58. Clean tools immediately after use with Reducer #58, R7K58. Follow manufacturer's safety recommendations when using any solvent.

DISCLAIMER

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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, R7K58.

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

Quick-Thane Urethane Accelerator is acceptable for use. See data page 5.97 for details.

E-Z Roll Urethane Defoamer is acceptable for use. See data page 5.99 for details.

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

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.

Material Safety Data Sheets

MATERIAL SAFETY DATA SHEET

B58W910
04 00

DATE OF PREPARATION
May 28, 2014

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER
B58W910

PRODUCT NAME
STEEL-SEAM® FT910 Epoxy (Part A), White

MANUFACTURER'S NAME
THE SHERWIN-WILLIAMS COMPANY
101 Prospect Avenue N.W.
Cleveland, OH 44115

Telephone Numbers and Websites

Product Information	(800) 524-5979 www.sherwin-williams.com
Regulatory Information	(216) 566-2902 www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
**for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)*	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
7	100-51-6	**Phenylmethanol**		
		ACGIH TLV	Not Available	0.15 mm
		OSHA PEL	Not Available	
2	107-41-5	**Hexylene Glycol**		
		ACGIH TLV	25 PPM CEILING	0.046 mm
		OSHA PEL	Not Available	
3	84852-15-3	**4-Nonylphenol**		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
7	68609-97-2	**Alkyl Glycidyl Ether**		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
55	25085-99-8	**Epoxy Polymer**		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
3	25068-38-6	**Epoxy Polymer**		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
12	93763-70-3	**Perlite**		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	15 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	
2	13463-67-7	**Titanium Dioxide**		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE
INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

HMIS Codes

Health	3*
Flammability	1
Reactivity	0

EFFECTS OF OVEREXPOSURE

EYES: Causes burns.
SKIN: Causes burns.
INHALATION: Irritation of the upper respiratory system.

In a confined area vapors in high concentration may cause headache, nausea or dizziness.
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:

- the nervous system
- the reproductive system

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

May cause allergic skin reaction in susceptible persons or skin sensitization.

CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention **IMMEDIATELY**.
SKIN: Wash affected area thoroughly with soap and water.
If irritation persists or occurs later, get medical attention.
Remove contaminated clothing and launder before re-use.
INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
> 200 °F PMCC	Not Applicable	Not Applicable	Not Applicable

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam

UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode (due to the build-up of pressure) when exposed to extreme heat.
During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.
Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate the area.
Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY

DOL Storage Class IIIB

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.
Do not get in eyes or on skin. Avoid breathing vapor and spray mist.
Wash hands after using.
This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

PROTECTIVE GLOVES

To prevent skin contact, wear gloves which are recommended by glove supplier for protection against materials in Section 2.

EYE PROTECTION

To prevent eye contact, wear safety spectacles with unperforated sideshields.

OTHER PROTECTIVE EQUIPMENT

Use barrier cream on exposed skin.

OTHER PRECAUTIONS

This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	7.50 lb/gal	898 g/l
SPECIFIC GRAVITY	0.90	
BOILING POINT	212 - 405 °F	100 - 207 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	10%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	Not Available	

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

0.76 lb/gal	91 g/l	Less Water and Federally Exempt Solvents
0.75 lb/gal	90 g/l	Emitted VOC

VOLATILE ORGANIC COMPOUNDS (VOC - As Applied)

<0.83 lb/gal	<100 g/l	Less Water and Federally Exempt Solvents

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint."

TOXICOLOGY DATA

CAS No.	Ingredient Name			
100-51-6	**Phenylmethanol**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
107-41-5	**Hexylene Glycol**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		3700 mg/kg
84852-15-3	**4-Nonylphenol**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
68609-97-2	**Alkyl Glycidyl Ether**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
25085-99-8	**Epoxy Polymer**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
25068-38-6	**Epoxy Polymer**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
93763-70-3	**Perlite**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
13463-67-7	**Titanium Dioxide**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product is not hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.
Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)

Not Regulated for Transportation.

DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Xylenes (isomers and mixture) 100 lb RQ

Canada (TDG)

Not Regulated for Transportation.

IMO

Not Regulated for Transportation.

IATA/ICAO

Not Regulated for Transportation.

SECTION 15 — REGULATORY INFORMATION

SARA 313 *(40 CFR 372.65C)* SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element

No ingredients in this product are subject to SARA 313 (40 CFR 372.65C) Supplier Notification.

CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

MATERIAL SAFETY DATA SHEET

B58W610
24 00

DATE OF PREPARATION
Aug 23, 2014

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER
B58W610

PRODUCT NAME
MACROPOXY® 646 Fast Cure Epoxy Coating (Part A), Mill White

MANUFACTURER'S NAME
THE SHERWIN-WILLIAMS COMPANY
101 Prospect Avenue N.W.
Cleveland, OH 44115

Telephone Numbers and Websites

Product Information	(800) 524-5979 www.sherwin-williams.com
Regulatory Information	(216) 566-2902 www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
**for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)*	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
3	100-41-4	**Ethylbenzene**		
		ACGIH TLV	20 PPM	7.1 mm
		OSHA PEL	100 PPM	
		OSHA PEL	125 PPM STEL	
15	1330-20-7	**Xylene**		
		ACGIH TLV	100 PPM	5.9 mm
		ACGIH TLV	150 PPM STEL	
		OSHA PEL	100 PPM	
		OSHA PEL	150 PPM STEL	
10	68410-23-1	**Polyamide**		
		ACGIH TLV	Not Available	
		OSHA PEL	Not Available	
9	14807-96-6	**Talc**		
		ACGIH TLV	2 mg/m3 as Resp. Dust	
		OSHA PEL	2 mg/m3 as Resp. Dust	
31	13463-67-7	**Titanium Dioxide**		
		ACGIH TLV	10 mg/m3 as Dust	
		OSHA PEL	10 mg/m3 Total Dust	
		OSHA PEL	5 mg/m3 Respirable Fraction	

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE
INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

HMIS Codes

Health	3*
Flammability	3
Reactivity	0

EFFECTS OF OVEREXPOSURE

EYES: Causes burns.
SKIN: Causes burns.
INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:

- the liver
- the urinary system
- the reproductive system

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

May cause allergic skin reaction in susceptible persons or skin sensitization.

CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention **IMMEDIATELY**.
SKIN: Wash affected area thoroughly with soap and water.
If irritation persists or occurs later, get medical attention.
Remove contaminated clothing and launder before re-use.
INHALATION: If affected, remove from exposure. Restore breathing. Keep warm and quiet.
INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
84 °F PMCC	1.0	7.0	RED LABEL -- Flammable, Flash below 100 °F (38 °C)

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam

UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode when exposed to extreme heat.
Application to hot surfaces requires special precautions.
During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.
Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate the area.
Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY

DOL Storage Class IC

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are FLAMMABLE. Keep away from heat, sparks, and open flame.
During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition.
Consult NFPA Code. Use approved Bonding and Grounding procedures.
Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.
Do not get in eyes or on skin. Avoid breathing vapor and spray mist.
Wash hands after using.
This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.
When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

PROTECTIVE GLOVES

To prevent skin contact, wear gloves which are recommended by glove supplier for protection against materials in Section 2.

EYE PROTECTION

To prevent eye contact, wear safety spectacles with unperforated sideshields.

OTHER PROTECTIVE EQUIPMENT

Use barrier cream on exposed skin.

OTHER PRECAUTIONS

This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	12.19 lb/gal	1460 g/l
SPECIFIC GRAVITY	1.47	
BOILING POINT	277 - 292 °F	136 - 144 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	29%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	Not Available	

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

2.11 lb/gal	253 g/l	Less Water and Federally Exempt Solvents
2.11 lb/gal	253 g/l	Emitted VOC

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

IARC's Monograph No. 93 reports there is sufficient evidence of carcinogenicity in experimental rats exposed to titanium dioxide but inadequate evidence for carcinogenicity in humans and has assigned a Group 2B rating. In addition, the IARC summary concludes, "No significant exposure to titanium dioxide is thought to occur during the use of products in which titanium is bound to other materials, such as paint."

TOXICOLOGY DATA

CAS No.	Ingredient Name			
100-41-4	**Ethylbenzene**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		3500 mg/kg
1330-20-7	**Xylene**			
		LC50 RAT	4HR	5000 ppm
		LD50 RAT		4300 mg/kg
68410-23-1	**Polyamide**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
14807-96-6	**Talc**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
13463-67-7	**Titanium Dioxide**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.
Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.
Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)

5 Liters (1.3 Gallons) and Less may be Classed as LTD. QTY. (PAINT OR RELATED).
Larger Containers are Regulated as:
UN1263, PAINT, 3, PG III, (ERG#128)

DOT (Dept of Transportation) Hazardous Substances & Reportable Quantities

Ethylbenzene 1000 lb RQ
Xylenes (isomers and mixture) 100 lb RQ

Bulk Containers may be Shipped as (check reportable quantities):

RQ, UN1263, PAINT, 3, PG III, (XYLENES (ISOMERS AND MIXTURE)), (ERG#128)

Canada (TDG)

UN1263, PAINT, CLASS 3, PG III, LIMITED QUANTITY, (ERG#128)

IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.
UN1263, PAINT, CLASS 3, PG III, (29 C c.c.), EmS F-E, S-E

IATA/ICAO

UN1263, PAINT, 3, PG III

SECTION 15 — REGULATORY INFORMATION

SARA 313 *(40 CFR 372.65C)* SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
100-41-4	Ethylbenzene	3	
1330-20-7	Xylene	15	

CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

ITW Polymer Technologies

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name:	**AS-175/NS-125 BEIGE BASE PT A**
MSDS Manufacturer Number:	AS155R
Manufacturer Name:	ITW Polymer Technologies
Address:	130 Commerce Drive Montgomeryville, PA 18936
General Phone Number:	(215) 855-8450
Emergency Phone Number:	(215) 855-8450
CHEMTREC:	For emergencies in the US, call CHEMTREC: 800-424-9300
Canutec:	In Canada, call CANUTEC: (613) 996-6666 (call collect)
MSDS Revision Date:	06/15/2009

HMIS

Health Hazard	2*
Fire Hazard	1
REACTIVITY	1
Personal Protection	X

* Chronic Health Effects:

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Ingredient Percent
Silica, crystalline (quartz)	14808-60-7	30 - 60 by weight
Titanium dioxide	13463-67-7	1 - 5 by weight
Alkyl glycidyl ether	68609-97-2	1 - 5 by weight
1-methoxy-2-propanol	107-98-2	1 - 5 by weight
Non hazardous ingredients	Not applicable	10 - 30 by weight
All Types of Sand	No data	10 - 30 by weight
Reaction product of epichlorohydrin & bisphenol A	25085-99-8	10 - 30 by weight
Benzyl Alcohol	100-51-6	1 - 5 by weight

SECTION 3 - HAZARDS IDENTIFICATION

Emergency Overview:	DANGER! Severe Irritant. Potential Sensitizer Potential reproductive effects. Harmful.
Route of Exposure:	Eyes. Skin. Inhalation. Ingestion.
Potential Health Effects:	
Eye:	Can cause severe eye irritation and burns. Eye contact may cause permanent damage or blindness.
Skin:	Causes severe skin irritation. May cause permanent skin damage. Allergic reactions are possible. May cause skin sensitization, an allergic reaction, which becomes evident on reexposure to this material.
Inhalation:	Toxic by inhalation. Vapor or mist may cause severe respiratory system irritation. May cause respiratory sensitization with asthma-like symptoms in susceptible individuals.
Ingestion:	Causes irritation, a burning sensation of the mouth, throat and gastrointestinal tract and abdominal pain.
Chronic Health Effects:	Prolonged skin contact may lead to burning associated with severe reddening, swelling, and possible tissue destruction.
Signs/Symptoms:	Overexposure may cause eye watering or discomfort, redness and swelling.
Target Organs:	Eyes. Skin. Respiratory system. Digestive system. Reproductive System.
Aggravation of Pre-Existing Conditions:	Individuals with pre-existing skin disorders, asthma, allergies or known sensitization may be more susceptible to the effects of this product.

SECTION 4 - FIRST AID MEASURES

Eye Contact:	Immediately flush eyes with plenty of water for at least 15 to 20 minutes. Ensure adequate flushing of the eyes by separating the eyelids with fingers. Get immediate medical attention.
Skin Contact:	Immediately wash skin with plenty of soap and water for 15 to 20 minutes, while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists.

Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.
Ingestion:	If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Point:	>200 °F
Auto Ignition Temperature:	Not determined.
Lower Flammable/Explosive Limit:	Not determined.
Upper Flammable/Explosive Limit:	Not determined.
Fire Fighting Instructions:	Evacuate area of unprotected personnel. Use cold water spray to cool fire exposed containers to minimize risk of rupture. Do not enter confined fire space without full protective gear. If possible, contain fire run-off water.
Extinguishing Media:	Use carbon dioxide (CO2) or dry chemical when fighting fires involving this material.
Protective Equipment:	As in any fire, wear Self-Contained Breathing Apparatus (SCBA), MSHA/NIOSH (approved or equivalent) and full protective gear.
Unusual Fire Hazards:	Sealed containers at elevated temperatures may rupture explosively and spread fire due to polymerization. Heating above 300 deg F in the presence of air may cause slow oxidative decomposition and above 500 deg F may cause polymerization.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personnel Precautions:	Evacuate area and keep unnecessary and unprotected personnel from entering the spill area.
Environmental Precautions:	Avoid runoff into storm sewers, ditches, and waterways.
Spill Cleanup Measures:	Absorb spill with inert material (e,g., dry sand or earth), then place in a chemical waste container. Provide ventilation. Clean up spills immediately observing precautions in the protective equipment section. After removal, flush spill area with soap and water to remove trace residue. Avoid personal contact and breathing vapors or mists. Ventilate area. Use proper personal protective equipment as listed in section 8.
Other Precautions:	Pump or shovel to storage/salvage vessels.

SECTION 7 - HANDLING and STORAGE

Handling:	Use with adequate ventilation. Avoid breathing vapor, aerosol or mist.
Storage:	Store in a cool, dry, well ventilated area away from sources of heat and incompatible materials. Keep container tightly closed when not in use.
Hygiene Practices:	Wash thoroughly after handling.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION - EXPOSURE GUIDELINES

Engineering Controls:	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Good general ventilation should be sufficient to control airborne levels. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.
Eye/Face Protection:	Wear appropriate protective glasses or splash goggles as described by 29 CFR 1910.133, OSHA eye and face protection regulation, or the European standard EN 166.
Skin Protection Description:	Wear appropriate protective gloves and other protective apparel to prevent skin contact. Consult manufacturer's data for permeability data.
Respiratory Protection:	A NIOSH approved air-purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.
Other Protective:	Facilities storing or utilizing this material should be equipped with an eyewash and a deluge shower safety station.

EXPOSURE GUIDELINES

Silica, crystalline (quartz) :

Guideline ACGIH:	0.025 mg/m3 TLV-TWA: 0.025 mg/m3 Respirable fraction (R)
Guideline OSHA:	[10 mg/m3]/[{% SiO2} + 2]

Titanium dioxide :

Guideline ACGIH:	10 mg/m3 TLV-TWA: 10 mg/m3

1-methoxy-2-propanol :

Guideline ACGIH:	100 ppm TLV-STEL: 150 ppm TLV-TWA: 100 ppm
Notes :	Only established PEL and TLV values for the ingredients are listed.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

Physical State Appearance:	Paste.
Color:	beige
Boiling Point:	>212 °F
Melting Point:	32 °F Freezing
Vapor Density:	Not determined.
Vapor Pressure:	Not determined.
Evaporation Rate:	<1
pH:	Not determined.
Molecular Formula:	Mixture
Molecular Weight:	Mixture
Flash Point:	>200 °F
Auto Ignition Temperature:	Not determined.
VOC Content:	0.5 lbs/gal (60 g/l) mixed components

SECTION 10 - STABILITY and REACTIVITY

Chemical Stability:	Stable under normal temperatures and pressures.
Hazardous Polymerization:	Not reported.
Conditions to Avoid:	Extreme heat, sparks, and open flame. Incompatible materials, oxidizers and oxidizing conditions.
Incompatible Materials:	Oxidizing agents. Strong acids and alkalis.

SECTION 11 - TOXICOLOGICAL INFORMATION

Silica, crystalline (quartz) :

RTECS Number:	VV7330000
Carcinogenicity:	IARC: Group 1: Carcinogenic to humans. NTP: Reasonably anticipated to be a human carcinogen.

Titanium dioxide :

RTECS Number:	XR2275000
Carcinogenicity:	IARC: Group 2B: Possibly carcinogenic to humans. NTP: Reasonably anticipated to be a human carcinogen.

Alkyl glycidyl ether :

RTECS Number:	RR0562500
Skin:	Oral - Rat LD50 : 17100 mg/kg [Details of toxic effects not reported other than lethal dose value.]
Ingestion:	Oral - Rat LD50 : 17100 mg/kg [Details of toxic effects not reported other than lethal dose value.]

1-methoxy-2-propanol :

RTECS Number:	UB7700000
Eye:	Eye - Rabbit Standard Draize Test.: 500 mg/24H
Skin:	Intraperitoneal. - Rat LD50: 3720 mg/kg [Details of toxic effects not reported other than lethal dose value.] Subcutaneous - Rat LD50: 7800 mg/kg [Behavioral - Convulsions or effect on seizure threshold Behavioral - Ataxia Lungs, Thorax, or Respiration - Dyspnea] Intravenous. - Rat LD50: 4200 mg/kg [Behavioral - Convulsions or effect on seizure threshold Behavioral - Ataxia Lungs, Thorax, or Respiration - Dyspnea] Oral - Mouse LD50: 11700 mg/kg [Behavioral - Convulsions or effect on seizure threshold Behavioral - Ataxia Lungs, Thorax, or Respiration - Dyspnea] Intravenous. - Mouse LD50: 5300 mg/kg [Behavioral - Convulsions or effect on seizure threshold Behavioral - Ataxia Lungs, Thorax, or Respiration - Dyspnea] Oral - Rabbit LD50: 5700 mg/kg [Details of toxic effects not reported other than lethal dose value.] Administration onto the skin - Rabbit LD50: 13 gm/kg [Details of toxic effects not reported other than lethal dose value.] Subcutaneous - Rabbit LD50: 5 gm/kg [Details of toxic effects not reported other than lethal dose value.] Intravenous. - Rabbit LD50: 1200 mg/kg [Details of toxic effects not reported other than lethal dose value.] Oral - Rat LD50: 6600 mg/kg [Brain and Coverings - Other degenerative changes Behavioral - General anesthetic Lungs, Thorax, or Respiration - Dyspnea] Administration onto the skin - Rabbit Open irritation test: 500 mg

Inhalation:	Inhalation - Rat LC50: 10000 ppm/5H [Details of toxic effects not reported other than lethal dose value.]
Ingestion:	Oral - Mouse LD50: 11700 mg/kg [Behavioral - Convulsions or effect on seizure threshold Behavioral - Ataxia Lungs, Thorax, or Respiration - Dyspnea] Oral - Rat LD50: 6600 mg/kg [Brain and Coverings - Other degenerative changes Behavioral - General anesthetic Lungs, Thorax, or Respiration - Dyspnea]

Reaction product of epichlorohydrin & bisphenol A :

Skin:	Administration onto the skin - Rabbit LD50: 20 gm/kg [Behavioral - Somnolence (general depressed activity) Gastrointestinal - Hypermotility, diarrhea Nutritional and Gross Metabolic - Weight loss or decreased weight gain]
Ingestion:	Oral - Rat LD50: 11300 uL/kg [Details of toxic effects not reported other than lethal dose value.]

Benzyl Alcohol :

RTECS Number:	DN3150000
Skin:	Intraperitoneal. - Rat LD50: 400 mg/kg [Details of toxic effects not reported other than lethal dose value.] Intravenous. - Rat LD50: 53 mg/kg [Lungs, Thorax, or Respiration - Dyspnea] Oral - Mouse LD50: 1360 mg/kg [Details of toxic effects not reported other than lethal dose value.] Intraperitoneal. - Mouse LD50: 650 mg/kg [Behavioral - Altered sleep time (including change in righting reflex) Behavioral - Somnolence (general depressed activity) Lungs, Thorax, or Respiration - Dyspnea] Intravenous. - Mouse LD50: 324 mg/kg [Details of toxic effects not reported other than lethal dose value.] Oral - Rabbit LD50: 1040 mg/kg [Behavioral - Somnolence (general depressed activity)] Oral - Guinea pig LD50: 2500 mg/kg [Details of toxic effects not reported other than lethal dose value.] Oral - Rat LD50: 1230 mg/kg [Behavioral - Somnolence (general depressed activity) Behavioral - Excitement Behavioral - Coma] Oral - Mouse LD50: 1360 mg/kg [Behavioral - Somnolence (general depressed activity) Behavioral - Ataxia Lungs, Thorax, or Respiration - Respiratory depression] Oral - Rat LD50: 1660 mg/kg [Behavioral - Somnolence (general depressed activity) Behavioral - Ataxia Lungs, Thorax, or Respiration - Respiratory depression] Oral - Guinea pig LD50: 2500 mg/kg [Behavioral - Somnolence (general depressed activity) Behavioral - Ataxia Lungs, Thorax, or Respiration - Respiratory depression] Oral - Rabbit LD50: 1040 mg/kg [Behavioral - Somnolence (general depressed activity) Behavioral - Ataxia Lungs, Thorax, or Respiration - Respiratory depression] Administration onto the skin - Rat LD50: 100 pph/90M [Details of toxic effects not reported other than lethal dose value.] Administration onto the skin - Rabbit LD50: 2000 mg/kg [Details of toxic effects not reported other than lethal dose value.] Oral - Rat LD50: 1.5 mL/kg [Details of toxic effects not reported other than lethal dose value.]
Inhalation:	Inhalation - Mouse LC50: >500 mg/m3 [Behavioral - Somnolence (general depressed activity) Behavioral - Ataxia Lungs, Thorax, or Respiration - Respiratory depression] Inhalation - Rat LC50: >500 mg/m3 [Behavioral - Somnolence (general depressed activity) Behavioral - Ataxia Lungs, Thorax, or Respiration - Respiratory depression]
Ingestion:	Oral - Mouse LD50: 1360 mg/kg [Details of toxic effects not reported other than lethal dose value.] Oral - Rat LD50: 1230 mg/kg [Behavioral - Somnolence (general depressed activity) Behavioral - Excitement Behavioral - Coma] Oral - Mouse LD50: 1360 mg/kg [Behavioral - Somnolence (general depressed activity) Behavioral - Ataxia Lungs, Thorax, or Respiration - Respiratory depression] Oral - Rat LD50: 1660 mg/kg [Behavioral - Somnolence (general depressed activity) Behavioral - Ataxia Lungs, Thorax, or Respiration - Respiratory depression] Oral - Rat LD50: 1.5 mL/kg [Details of toxic effects not reported other than lethal dose value.]

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	No ecotoxicity data was found for the product.
Environmental Fate:	No environmental information found for this product.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal:	Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines.

SECTION 14 - TRANSPORT INFORMATION

DOT Shipping Name:	Non regulated.
DOT UN Number:	Non regulated.

SECTION 15 - REGULATORY INFORMATION

Silica, crystalline (quartz) :

TSCA Inventory Status:	Listed
Massachussetts:	Listed
Pennsylvania:	Listed
Canada DSL:	Listed

Titanium dioxide :

TSCA Inventory Status:	Listed
Massachussetts:	Listed
Pennsylvania:	Listed
Canada DSL:	Listed

Alkyl glycidyl ether :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

1-methoxy-2-propanol :

TSCA Inventory Status:	Listed
Massachussetts:	Listed: Massachusetts Oil and Hazardous List
Pennsylvania:	Listed
Canada DSL:	Listed

Reaction product of epichlorohydrin & bisphenol A :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Benzyl Alcohol :

TSCA Inventory Status:	Listed
Massachussetts:	Listed
Pennsylvania:	Listed
Canada DSL:	Listed
Canadian Regulations.	WHMIS Hazard Class(es): D2A, D2B All components of this product are on the Canadian Domestic Substances List.

WHMIS Pictograms

SECTION 16 - ADDITIONAL INFORMATION

HMIS Fire Hazard:	1
HMIS Health Hazard:	2*
HMIS Reactivity:	1
HMIS Personal Protection:	X
MSDS Revision Date:	06/15/2009
MSDS Author:	Actio Corporation
Disclaimer:	This Health and Safety Information is correct to the best of our knowledge and belief at the date of its publication but we cannot accept liability for any loss, injury or damage which may result from its use. The information given in the Data Sheet is designed only as a guidance for safe handling, storage and the use of the substance. It is not a specification nor does it guarantee any specific properties. All chemicals should be handled only by competent personnel, within a controlled environment.

ITW Polymer Technologies

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name:	**AS-175/NS-125 HARDENER**
MSDS Manufacturer Number:	AS159H
Manufacturer Name:	ITW Polymer Technologies
Address:	130 Commerce Drive Montgomeryville, PA 18936
General Phone Number:	(215) 855-8450
Emergency Phone Number:	(215) 855-8450
CHEMTREC:	For emergencies in the US, call CHEMTREC: 800-424-9300
Canutec:	In Canada, call CANUTEC: (613) 996-6666 (call collect)
MSDS Revision Date:	06/15/2009

HMIS

Health Hazard	2*
Fire Hazard	1
REACTIVITY	1
Personal Protection	X

* Chronic Health Effects:

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS#	Ingredient Percent
Poly(oxy(methyl-1,2-ethanedlyl)), alpha-(2-aminomethylethyl)omega-(2-aminomethylethoxy)-	9046-10-0	1 - 5 by weight
Tetraethylenepentamine	112-57-2	1 - 5 by weight
Polyamide/Epoxy Adduct	68424-41-9	10 - 30 by weight
Polyamine polymer	Propietary	30 - 60 by weight

SECTION 3 - HAZARDS IDENTIFICATION

Emergency Overview:	DANGER! Severe Irritant. Potential Sensitizer Harmful.
Route of Exposure:	Eyes. Skin. Inhalation. Ingestion.
Potential Health Effects:	
Eye:	Can cause severe eye irritation and burns. Eye contact may cause permanent damage or blindness.
Skin:	Causes severe skin irritation. May cause permanent skin damage. Allergic reactions are possible. May cause skin sensitization, an allergic reaction, which becomes evident on reexposure to this material.
Inhalation:	Vapor or mist may cause severe respiratory system irritation. May cause respiratory sensitization with asthma-like symptoms in susceptible individuals.
Ingestion:	Toxic if swallowed. Causes irritation, a burning sensation of the mouth, throat and gastrointestinal tract and abdominal pain.
Chronic Health Effects:	Prolonged skin contact may lead to burning associated with severe reddening, swelling, and possible tissue destruction.
Signs/Symptoms:	Overexposure may cause eye watering or discomfort, redness and swelling.
Target Organs:	Eyes. Skin. Respiratory system. Digestive system.
Aggravation of Pre-Existing Conditions:	Individuals with pre-existing skin disorders, asthma, allergies or known sensitization may be more susceptible to the effects of this product.

SECTION 4 - FIRST AID MEASURES

Eye Contact:	Immediately flush eyes with plenty of water for at least 15 to 20 minutes. Ensure adequate flushing of the eyes by separating the eyelids with fingers. Get immediate medical attention.
Skin Contact:	Immediately wash skin with plenty of soap and water for 15 to 20 minutes, while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.
Ingestion:	If swallowed, do NOT induce vomiting. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Point:	>200 °F
Auto Ignition Temperature:	Not determined.
Lower Flammable/Explosive Limit:	Not determined.
Upper Flammable/Explosive Limit:	Not determined.
Fire Fighting Instructions:	Evacuate area of unprotected personnel. Use cold water spray to cool fire exposed containers to minimize risk of rupture. Do not enter confined fire space without full protective gear. If possible, contain fire run-off water.
Extinguishing Media:	Use carbon dioxide (CO2) or dry chemical when fighting fires involving this material.
Unsuitable Media:	Water or foam may cause frothing.
Protective Equipment:	As in any fire, wear Self-Contained Breathing Apparatus (SCBA), MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personnel Precautions:	Evacuate area and keep unnecessary and unprotected personnel from entering the spill area.
Environmental Precautions:	Avoid runoff into storm sewers, ditches, and waterways.
Spill Cleanup Measures:	Absorb spill with inert material (e,g., dry sand or earth), then place in a chemical waste container. Provide ventilation. Clean up spills immediately observing precautions in the protective equipment section. After removal, flush spill area with soap and water to remove trace residue. Avoid personal contact and breathing vapors or mists. Ventilate area. Use proper personal protective equipment as listed in section 8.
Other Precautions:	Pump or shovel to storage/salvage vessels.

SECTION 7 - HANDLING and STORAGE

Handling:	Use with adequate ventilation. Avoid breathing vapor, aerosol or mist.
Storage:	Store in a cool, dry, well ventilated area away from sources of heat and incompatible materials. Keep container tightly closed when not in use. Do not store in reactive metal containers. Keep away from acids, oxidizers.
Special Handling Procedures:	Provide appropriate ventilation/respiratory protection against decomposition products (see Section 10) during welding/flame cutting operations and to protect against dust during sanding/grinding of cured product.
Hygiene Practices:	Wash thoroughly after handling.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION - EXPOSURE GUIDELINES

Engineering Controls:	Use appropriate engineering control such as process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Good general ventilation should be sufficient to control airborne levels. Where such systems are not effective wear suitable personal protective equipment, which performs satisfactorily and meets OSHA or other recognized standards. Consult with local procedures for selection, training, inspection and maintenance of the personal protective equipment.
Eye/Face Protection:	Wear appropriate protective glasses or splash goggles as described by 29 CFR 1910.133, OSHA eye and face protection regulation, or the European standard EN 166.
Skin Protection Description:	Wear appropriate protective gloves and other protective apparel to prevent skin contact. Consult manufacturer's data for permeability data.
Respiratory Protection:	A NIOSH approved air-purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.
Other Protective:	Facilities storing or utilizing this material should be equipped with an eyewash and a deluge shower safety station.

EXPOSURE GUIDELINES

Notes :	Only established PEL and TLV values for the ingredients are listed.

SECTION 9 - PHYSICAL and CHEMICAL PROPERTIES

Physical State Appearance:	Liquid.
Color:	Amber.
Boiling Point:	>212 °F
Melting Point:	32 °F Freezing

Vapor Density:	Not determined.
Vapor Pressure:	Not determined.
Evaporation Rate:	<2
pH:	Not determined.
Molecular Formula:	Mixture
Molecular Weight:	Mixture
Flash Point:	>200 °F
Auto Ignition Temperature:	Not determined.
VOC Content:	0.5 lbs/gal (60 g/l) mixed components

SECTION 10 - STABILITY and REACTIVITY

Chemical Stability:	Stable under normal temperatures and pressures.
Hazardous Polymerization:	Not reported.
Conditions to Avoid:	Extreme heat, sparks, and open flame. Incompatible materials, oxidizers and oxidizing conditions.
Incompatible Materials:	Oxidizers, acids, and chlorinated organic compounds. Reactive metals (e.g. sodium, calcium, zinc). Sodium/calcium hypochlorite. Nitrous acid/ oxide, nitrites. Peroxides. Materials reactive with hydroxyl compounds.

SECTION 11 - TOXICOLOGICAL INFORMATION

Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)omega-(2-aminomethylethoxy)- :

RTECS Number:	TR3702500
Eye:	Eye - Rabbit Standard Draize Test.: 100 mg [severe]
Skin:	Oral - Rat LD50 : 242 mg/kg [Behavioral - Convulsions or effect on seizure threshold Gastrointestinal - Ulceration or bleeding from stomach Blood - Hemorrhage] Administration onto the skin - Rabbit LD50 : 360 mg/kg [Lungs, Thorax, or Respiration - Other changes Blood - Hemorrhage Skin and Appendages - Dermatitis, other (After systemic exposure)]
Ingestion:	Oral - Rat LD50 : 242 mg/kg [Behavioral - Convulsions or effect on seizure threshold Gastrointestinal - Ulceration or bleeding from stomach Blood - Hemorrhage]

Tetraethylenepentamine :

RTECS Number:	KH8585000
Eye:	Eye - Rabbit Standard Draize Test.: 5 mg [Moderate] Eye - Rabbit Standard Draize Test.: 100 mg/24H [Moderate]
Skin:	Oral - Rat LD50 : 3990 mg/kg [Details of toxic effects not reported other than lethal dose value.] Intraperitoneal. - Rat LD50 : 205 mg/kg [Details of toxic effects not reported other than lethal dose value.] Intravenous. - Mouse LD50 : 320 mg/kg [Details of toxic effects not reported other than lethal dose value.] Administration onto the skin - Rabbit LD50 : 660 uL/kg [Details of toxic effects not reported other than lethal dose value.] Administration onto the skin - Rabbit Open irritation test: 495 mg [severe]
Ingestion:	Oral - Rat LD50 : 3990 mg/kg [Details of toxic effects not reported other than lethal dose value.]

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	No ecotoxicity data was found for the product.
Environmental Fate:	No environmental information found for this product.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal:	Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal. Furthermore, consult with your state and local waste requirements or guidelines, if applicable, to ensure compliance. Arrange disposal in accordance to the EPA and/or state and local guidelines.

SECTION 14 - TRANSPORT INFORMATION

DOT Shipping Name:	Non regulated.
DOT UN Number:	Non regulated.

SECTION 15 - REGULATORY INFORMATION

Poly(oxy(methyl-1,2-ethanediyl)), alpha-(2-aminomethylethyl)omega-(2-aminomethylethoxy)- :

TSCA Inventory Status:	Listed
Canada DSL:	Listed

Tetraethylenepentamine :

TSCA Inventory Status:	Listed
Massachussetts:	Listed
Pennsylvania:	Listed
Canada DSL:	Listed

Polyamide/Epoxy Adduct :

TSCA Inventory Status:	Listed
Canada DSL:	Listed
Canadian Regulations.	WHMIS Hazard Class(es): D2A, D2B All components of this product are on the Canadian Domestic Substances List.

WHMIS Pictograms

SECTION 16 - ADDITIONAL INFORMATION

HMIS Fire Hazard:	1
HMIS Health Hazard:	2*
HMIS Reactivity:	1
HMIS Personal Protection:	X
MSDS Revision Date:	06/15/2009
MSDS Author:	Actio Corporation
Disclaimer:	This Health and Safety Information is correct to the best of our knowledge and belief at the date of its publication but we cannot accept liability for any loss, injury or damage which may result from its use. The information given in the Data Sheet is designed only as a guidance for safe handling, storage and the use of the substance. It is not a specification nor does it guarantee any specific properties. All chemicals should be handled only by competent personnel, within a controlled environment.

MATERIAL SAFETY DATA SHEET

B65T304
24 00

DATE OF PREPARATION
Jul 18, 2014

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER
B65T304

PRODUCT NAME
Hi-Solids Polyurethane - Gloss (Part S), Ultradeep Base

MANUFACTURER'S NAME
THE SHERWIN-WILLIAMS COMPANY
101 Prospect Avenue N.W.
Cleveland, OH 44115

Telephone Numbers and Websites

Product Information	(800) 524-5979 www.sherwin-williams.com
Regulatory Information	(216) 566-2902 www.paintdocs.com
Medical Emergency	(216) 566-2917
Transportation Emergency*	(800) 424-9300
**for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)*	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

% by Weight	CAS Number	Ingredient	Units	Vapor Pressure
1	**64742-88-7**	**Med. Aliphatic Hydrocarbon Solvent**		
		ACGIH TLV	100 PPM	1.27 mm
		OSHA PEL	100 PPM	
23	**110-43-0**	**Methyl n-Amyl Ketone**		
		ACGIH TLV	50 PPM	3.855 mm
		OSHA PEL	100 PPM	
2	**108-94-1**	**Cyclohexanone**		
		ACGIH TLV	25 ppm (Skin)	2 mm
		OSHA PEL	25 ppm (Skin)	
16	**14808-60-7**	**Quartz**		
		ACGIH TLV	0.025 mg/m3 as Resp. Dust	
		OSHA PEL	0.1 mg/m3 as Resp. Dust	

SECTION 3 — HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE
INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.

HMIS Codes

Health	2*
Flammability	2
Reactivity	0

EFFECTS OF OVEREXPOSURE
EYES: Irritation.
SKIN: Prolonged or repeated exposure may cause irritation.
INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.
Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:
- the liver
- the urinary system

SIGNS AND SYMPTOMS OF OVEREXPOSURE
Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.
Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
May cause allergic respiratory and/or skin reaction in susceptible persons or sensitization. This effect may be delayed several hours after exposure.
Persons sensitive to isocyanates will experience increased allergic reaction on repeated exposure.

CANCER INFORMATION
For complete discussion of toxicology data refer to Section 11.

SECTION 4 — FIRST AID MEASURES

EYES: Flush eyes with large amounts of water for 15 minutes. Get medical attention.
SKIN: Wash affected area thoroughly with soap and water.
Remove contaminated clothing and launder before re-use.
INHALATION: If any breathing problems occur during use, **LEAVE THE AREA** and get fresh air. If problems remain or occur later, **IMMEDIATELY** get medical attention.
INGESTION: Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

FLASH POINT	LEL	UEL	FLAMMABILITY CLASSIFICATION
102 °F PMCC	1.0	8.1	Combustible, Flash above 99 and below 200 °F

EXTINGUISHING MEDIA
Carbon Dioxide, Dry Chemical, Foam
UNUSUAL FIRE AND EXPLOSION HAZARDS
Closed containers may explode when exposed to extreme heat.
Application to hot surfaces requires special precautions.
During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.
SPECIAL FIRE FIGHTING PROCEDURES
Full protective equipment including self-contained breathing apparatus should be used.
Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Remove all sources of ignition. Ventilate the area.
Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

STORAGE CATEGORY
DOL Storage Class II
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
Contents are COMBUSTIBLE. Keep away from heat and open flame.
Consult NFPA Code. Use approved Bonding and Grounding procedures.
Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE
NO PERSON SHOULD USE THIS PRODUCT, OR BE IN THE AREA WHERE IT IS BEING USED, IF THEY HAVE CHRONIC (LONG-TERM) LUNG OR BREATHING PROBLEMS OR IF THEY EVER HAD A REACTION TO ISOCYANATES.
Use only with adequate ventilation.
Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.
Wash hands after using.
This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).
VENTILATION
Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.
RESPIRATORY PROTECTION
Where overspray is present, a positive pressure air supplied respirator (TC19C NIOSH/MSHA approved) should be worn. If unavailable, a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2 may be effective. Follow respirator manufacturers directions for use. Wear the respirator for the whole time of spraying and until all vapors and mists are gone. **NO PERSONS SHOULD BE ALLOWED IN THE AREA WHERE THIS PRODUCT IS BEING USED UNLESS EQUIPPED WITH THE SAME RESPIRATOR PROTECTION RECOMMENDED FOR THE PAINTERS.**
When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.
PROTECTIVE GLOVES
To prevent skin contact, wear gloves which are recommended by glove supplier for protection against materials in Section 2.
EYE PROTECTION
Wear safety spectacles with unperforated sideshields.

OTHER PROTECTIVE EQUIPMENT

Use barrier cream on exposed skin.

OTHER PRECAUTIONS

This product must be mixed with other components before use. Before opening the packages, READ AND FOLLOW WARNING LABELS ON ALL COMPONENTS.

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	9.46 lb/gal	1133 g/l
SPECIFIC GRAVITY	1.14	
BOILING POINT	297 - 395 °F	147 - 201 °C
MELTING POINT	Not Available	
VOLATILE VOLUME	36%	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	Not Available	

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

2.43 lb/gal	292 g/l	Less Water and Federally Exempt Solvents
2.43 lb/gal	292 g/l	Emitted VOC

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Crystalline Silica (Quartz, Cristobalite) is listed by IARC and NTP. Long term exposure to high levels of silica dust, which can occur only when sanding or abrading the dry film, may cause lung damage (silicosis) and possibly cancer.

TOXICOLOGY DATA

CAS No.	Ingredient Name			
64742-88-7	**Med. Aliphatic Hydrocarbon Solvent**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available
110-43-0	**Methyl n-Amyl Ketone**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		1670 mg/kg
108-94-1	**Cyclohexanone**			
		LC50 RAT	4HR	8000 ppm
		LD50 RAT		1535 mg/kg
14808-60-7	**Quartz**			
		LC50 RAT	4HR	Not Available
		LD50 RAT		Not Available

SECTION 12 — ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

No data available.

SECTION 13 — DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

US Ground (DOT)

May be Classed as a Combustible Liquid for U.S. Ground.
UN1263, PAINT, 3, PG III, (ERG#128)

Bulk Containers may be Shipped as:

UN1263, PAINT, COMBUSTIBLE LIQUID, PG III, (ERG#128)

Canada (TDG)

May be Classed as a Combustible Liquid for Canadian Ground.
UN1263, PAINT, CLASS 3, PG III, (ERG#128)

IMO

5 Liters (1.3 Gallons) and Less may be Shipped as Limited Quantity.
UN1263, PAINT, CLASS 3, PG III, (39 C c.c.), EmS F-E, S-E

IATA/ICAO

UN1263, PAINT, 3, PG III

SECTION 15 — REGULATORY INFORMATION

SARA 313 *(40 CFR 372.65C)* SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element

No ingredients in this product are subject to SARA 313 (40 CFR 372.65C) Supplier Notification.

CALIFORNIA PROPOSITION 65

WARNING: This product contains chemicals known to the State of California to cause cancer.

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.