SHIPBUILDERS AND MARINE PAINTS AND COATINGS PRODUCT/PROCEDURE DATA SHEET

CONTINUATION SHEET USED: ☒ YES ☐ NO

Date: 23 August 2018

I. GENERIC TYPE AND DESCRIPTION: MS-200 Acrylic Epoxy Color Topping
Specification Number: MIL-PRF-24667
NOTE: For Type/Grade/Class/Application information see QPL-24667

II. MANUFACTURERS DATA:

(a) MANUFACTURER: ITW Polymers Sealants North America, 111 S Nursery Road, Irving, TX 75060

(b) PRODUCT DESIGNATION: MS-200 / MS209R D. Gray / MS207R Green / MS205R Red / MS201R White / MS203R Yellow / MS218H Part B

(c) COLOR(S): Dark Gray, Green, Red, White, Yellow

(d) USES: Non-skid VLA Markings, Borders, Aircraft Secure Fittings, and areas not to receive a non-skid overcoat.

(e) TECHNICAL SERVICE REPRESENTATIVE
(Include Telephone Number): 800-878-7876, Fax: 972-554-3939, Email: orders1@itwsealants.com, web site: www.itwast.com

(f) NOT INTENDED FOR USE ON: N/A

III. PROPERTIES:

(a) % VOLUME SOLIDS (ASTM D2697): White: 54 ± 2%, all other colors: 56 ± 2%

(b) % WEIGHT SOLIDS (ASTM D2369): White 69 ± 2%, all other colors 66 ± 2%

(c) FLASH POINT (ASTM D3278): Part A > 102˚F (39˚C) Part B > 105˚F (40˚C)

(d) WEIGHT PER VOLUME (ASTM D1475): White 10.5 ± 0.2 lbs. per gallon / all other colors 9.5 ± 0.2 lbs. per gallon

(e) % EDGE RETENTION (IF REQUIRED BY APPLICABLE SPECIFICATION – LIST TEST METHOD USED): N/A

(f) SHELF LIFE: 1 Year

(g) VISCOSITY (ASTM D2196): PART A: 800 – 2,500 cps (Brookfield viscosity)

PART B: 20 - 100 cps (Brookfield viscosity)

MIXED: 700 – 2,300 cps (Brookfield viscosity)

(h) PACKAGING: Part A: 4.35 gallons in 6 ½ gallon pail, Part B: 0.56 gallon in a 1-gallon bag

(i) NUMBER OF COMPONENTS: 2

(j) GLOSS (ASTM D523): Semi-Gloss

(k) STORAGE REQUIREMENTS: TEMP. MIN. 40˚F MAX. 100˚F

24 HOURS PRIOR TO MIX: TEMP. MIN. 50˚F MAX. 90˚F

(l) VOLATILE ORGANIC COMPOUND (VOC- EPA TEST METHOD 24): White 395 g/l (3.3 lbs./gal), Colors 383 g/l (3.2 lbs./gal)

(m) WEIGHT PER AREA OF DRY FILM PER SQ. FT. AT 1 MIL THICKNESS: 2.95 – 4.09 grams (0.0065 – 0.0090 lbs.).

(n) SPECIAL PROPERTIES: N/A

IV. SURFACE PREPARATION MINIMUM REQUIREMENTS:

(a) INITIAL: Remove grease, oil and dirt (SSPC-SP1) or other approved method.

MIN: N/A

(b) TOUCH-UP: Ensure surface is clean and free from dirt, oil, grease and all other containments.

(c) PROFILE (ASTM D4417 Method B or C): MIN. N/A MAX. N/A

(d) SPECIAL INSTRUCTIONS: N/A

(e) PRIMER REQUIREMENTS: MS-7CZ / MS-8CZ / MS-9CZ / MS-11CZ

(f) MAXIMUM ALLOWABLE CONDUCTIVITY (BRESLE PATCH METHOD ISO 8502-9): N/A

(g) MAXIMUM DEGREE OF FLASH RUSTING ALLOWED: N/A

SPECIAL SAFETY PRECAUTIONS:

CAUTIONS TO BE TAKEN IN HANDLING AND STORING: WARNING! IRRITANT, **Read MSDS before use.** Do not get in eyes, avoid contact with skin and clothing, and avoid inhalation vapor or mist. Use with adequate ventilation, wash thoroughly after handling and before eating, drinking or smoking. Remove contaminated clothing and wash before use. OTHER PRECAUTIONS: Avoid extreme heat – **keep away from flame or other ignition source.**

V. MIXING PROCEDURES: Improperly mixed material will not cure properly

(a) MIXING RATIOS BY WEIGHT: White 10.3:1, Yellow 9.7:1, all other colors 9.4:1 (Part A to Part B)
BY VOLUME: White 7.6:1, Yellow 7.7:1, all other colors 7.8:1 (Part A to Part B)

(b) INDUCTION TIME: 30 minutes, recommended after induction a remix for 1 minute prior to application

(c) RECOMMENDED SOLVENT – CLEAN UP: S-31 Solvent, S-426 Solvent, Isopropyl Alcohol, Aromatic Naphtha, MAK

(d) POT LIFE:

4 Hr.(s) @	90˚F (32°C)
6 Hr.(s) @	70˚F (21°C)
8 Hr.(s) @	50˚F (10°C)

(e) SPECIAL INSTRUCTIONS: Pre mix Part A, base component, to ensure all materials which may have settled during storage are lifted from the bottom. Using a clean mixing paddle and adequate mechanical mixer mix Part A and Part B components together for a minimum of 3 minutes or until the mixed material assumes a uniform color and appearance. **Warning- Improperly mixed material will not cure properly.**

VI. APPLICATION:

(a) ENVIRONMENTAL LIMITATIONS:

SUBSTRATE SURFACE TEMPERATURE:	MIN. 50˚F	MAX. 120˚F
AMBIENT TEMPERATURE :	MIN. 50˚F	MAX. 100˚F

MINIMUM SUBSTRATE TEMPERATURE DIFFERENCE ABOVE THE DEW POINT: 5˚F
MAXIMUM PERCENT RELATIVE HUMIDITY: 85%

(b) FILM THICKNESS (SSPC PA2-73T) - PER COAT:

WET MIN. 3 mils	WET MAX. 5 mils
DRY MIN. 2 mils	DRY MAX. 3.5 mils

(c) DRY TIMES (ASTM D 1640):

Surface Temperature	50˚F (10˚C)	70°F (21.1°C)	90°F (32.2°C)	120°F (48.8°C)
Dry to Handle*	30 Hrs.	12 Hrs.	6 Hrs.	3 Hrs.
Overcoat – Min**	24 Hrs.	6 Hrs.	3 Hrs.	2 Hrs.
Overcoat – Max	28 Days	14 Days	7 Days	3 Days
Cure to Full Service	14 Days	7 Days	3 Days	2 Days
Recoat-Reactivation	28 Days	14 Days	7 Days	3 Days

* Cured sufficiently for foot traffic, low resistance rolling equipment.
** Overcoat minimum for second coat if required, caution should be taken to avoid system buildup.
Note: For every 10˚F temperature increase the time of cure is reduced by 30% (0.3X) and conversely each decreases of 10˚F increases the cure time by 30% (1.3X).

Do not apply MS-200 Color Topping when surface is under 50˚F or over 120˚F, temperature must be at least 5°F above the dew point during application, temperatures below 50˚F should not be considered in the cure time calculations for MS-200. Note: Changes in environmental conditions (post application) are affected by day/night cure temperatures and exposure to sun light. Recorded temperature data will assist in determining an approximate creditable cure.

(d) EQUIPMENT REQUIREMENTS: Spray, Roller, or Brush, ½ HP mechanical mixer and suitable mixing blade.

(e) SPECIAL INSTRUCTIONS: To apply color topping to fixtures and borders, ensure surface to be overcoated is solvent cleaned and free of grease and POL products. Apply color topping for VLA on newly applied non-skid before coating is placed in service. Note: Additional coat/s of color topping for VLA renewal should be minimized as additional coats will degrade the non-skid coatings coefficient of friction. For applying additional coats of VLA color topping on operational vessels, ensure markings to be coated are cleaned of salts and POL products prior to application of paint. To apply color topping (Dark Gray) to fixtures and borders that had already been primed, reactivate primer coat IAW primer over coat criteria. In either event for color top of primer coat of fixtures and borders, perform a solvent clean to remove non-visible containments before over coating with MS-200. Color Topping may be used to over coat itself or non-skid in excess of the 30 day window provided the surface is thoroughly cleaned to remove all containments, salts, POL products to assure proper adhesion.

IF OVERCOAT WINDOW HAS BEEN EXCEEDED FOR CRITICAL APPLICATIONS RECEIVING NONSKID: N/A

IF OVERCOAT WINDOW HAS BEEN EXCEEDED FOR CRITICAL APPLICATIONS NOT RECEIVING NONSKID: This includes zone tie-in areas where the primer is to be overcoated with itself (up to 12 inches), borders, aircraft securing fitting, deck edge coaming, drains and fixtures. If less than 7 days has elapsed since the application of the primer coat, perform a complete cleaning by solvent wipe down of the primed area to be overcoated. After day 7 and up to day 30, if the next coat has not been applied, the entire surface shall be cleaned in accordance with SSPC-SP1. Ensure the surface has fully dried following solvent cleaning, and then lightly abrade with abrasive blast, power sanding, or hand sanding using 80-120 grit. Perform a solvent re-clean of the abraded surface and allow any visible traces of solvent to fully evaporate. A proprietary primer or color topping may be applied after visual inspection confirms the absence of surface containments following solvent cleaning and after ensuring surfaces have completely dried and all solvent has evaporated.

IF OVERCOAT WINDOW HAS BEEN EXCEEDED FOR NON-CRITICAL APPLICATIONS: If less than 7 days has elapsed since the application of the primer coat perform a complete cleaning by solvent wipe down of the primed area to be overcoated. A proprietary primer, nonskid or color topping may be applied after visual inspection confirms the absence of surface containments following solvent cleaning and after ensuring surfaces have completely dried and all solvent has evaporated. After day 7 and up to day 30, if the next coat has not been applied, the entire surface shall be cleaned in accordance with SSPC-SP1. Beyond 30 days Ensure the surface has fully dried following solvent cleaning and then lightly abrade with abrasive blast, power sanding or by hand sanding using 80-120 grit. Perform a solvent re-clean of the abraded surface and allow any visible traces of solvent to fully evaporate. Apply a tack coat (2-3 mils/ 50-75 microns WFT) of proprietary primer. Minimum overcoat dry times for application of a “tack coat” applied to a primer coat shall be those indicated within the Dry Time table in section VI. (c) Of the applicable proprietary primer.

ADDITIONAL DATA/INSTRUCTIONS:

II. MANUFACTURERS DATA: N/A

III. PROPERTIES: N/A

IV. SURFACE PREPARATION MINIMUM REQUIREMENTS: N/A.

V. MIXING PROCEDURES: N/A

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VI. APPLICATION REQUIREMENTS: NOTE: Dry times are a function of humidity, ventilation, and temperature. Dry time information provided is to be used as a guideline only. When substrate temperatures fall below 50˚F after application, the MS-200 Color Topping system dry time is retarded requiring additional dry time. Applicators must take this into consideration before the next coating process is started in allowing for sufficient dry time.

STRIPE COAT PROCEDURES – N/A

SPECIAL INSTRUCTIONS: N/A

NOTE: MS-200 is formulated to be applied within the parameters listed on this document. NAVSEA Standard Item 009-32 applications may adjust the environmental and application procedures recommended by this ASTM F-718.

WARRANTY DISCLAIMER: The technical data supplied herein has been compiled for the applicator's assistance and guidance and based on experience and knowledge. However, as a manufacturer, we have no control over the use to which this information is put, no warranty, expressed or implied, is intended or given.