NAVSEA REVIEWED ASTM F-718

The Sherwin Williams Company

SeaVoyage Copper Free Antifoulant

PRODUCT DESIGNATIONS

SeaVoyage Copper Free Antifoulant; N51R301 Red, N51B301 Black, N51L301 Blue

MIL-PRF--24647

If this product is to be applied as part of a coating system, all components of the system must be as listed on the QPL.

This NAVSEA-REVIEWED ASTM F-718 data sheet is the only data sheet approved for use when utilizing this coating for U.S. Navy preservation projects. NAVSEA's review covers only the application process for the material. The review does not denote the material as a qualified product, nor does it constitute an approval for purchase/procurement of the material. For products on the Qualified Products List (QPL) for this MILSPEC, please refer to http://qpldocs.dla.mil/search/default.aspx.

Questions regarding modifications or updates of this ASTM F-718 shall be directed toward:

NSWCPD

NSWCPD_ASTM_F718.fct@navy.mil

NAVSEA Reviewed: 10 April 2018

ASTM F 718

SHIPBUILDERS AND MARINE PAINTS AND COATINGS PRODUCT/PROCEDURE DATA SHEET

CONTINUATION SHEET USED: ☒ YES ☐ NO

Date: 02/08/18 Rev.

I. GENERIC TYPE AND DESCRIPTION: Sherwin-Williams SeaVoyage Copper Free Antifoulant
Specification Number: MIL-PRF-24647, PAINT SYSTEM, ANTICORROSIVE AND ANTIFOULING, SHIP HULL
NOTE: For Type/Grade/Class/Application information see QPD-24647

II. MANUFACTURERS DATA:

(a) MANUFACTURER: The Sherwin-Williams Company

(b) PRODUCT DESIGNATION: SeaVoyage Copper Free Antifoulant; N51R301 Red, N51B301 Black, N51L301 Blue

(c) COLOR(S): Red, black, and blue

(d) USES: Antifoulant

(e) TECHNICAL SERVICE REPRESENTATIVE: 1-877-877-7115 or your local Sherwin-Williams Representative

(f) NOT RECOMMENDED FOR: Potable water, topside, interior spaces

III. PROPERTIES:

(a) PERCENT VOLUME SOLIDS (ASTM D2697): 65%

(b) PERCENT WEIGHT SOLIDS (ASTM D2369): 75%

(c): FLASH POINT (ASTM D93): 102ºF

(d): WEIGHT PER VOLUME (ASTM D1475): 12.5 $\pm$ 0.5 lbs per mixed gallon

(e) PERCENT EDGE RETENTION: N/A

(f): SHELF LIFE: 24 months

(g) VISCOSITY (ASTM D562): COMPONENT A: 90-110 KU's

COMPONENT B: N/A

MIXED: N/A

(h) PACKAGING: 1 and 5 gallon containers

(i): NUMBER OF COMPONENTS: 1

(j) GLOSS (ASTM D523): Matte (less than 50 units)

(k) STORAGE REQUIREMENTS: TEMPERATURE: MIN. 40ºF MAX. 100ºF

ADDITIONAL PAINT STORAGE REQUIREMENTS: Protected storage out of sun, rain, etc…

(l) VOLATILE ORGANIC COMPOUNDS (VOC - EPA TEST METHOD 24): $\leq$ 340 g/L

(m) WEIGHT PER AREA OF DRY FILM AT 1 MIL THICKNESS: 0.0090 lbs/square foot at 1 mil thickness

(n): SPECIAL PROPERTIES: : Tin free, copper free, no copper discharge, lower weight than traditional copper based antifoulant, acceptable for aluminum hulls

IV. SURFACE PREPARATION MINIMUM REQUIREMENTS:

(a) INITIAL – SSPC-SP10 (Near White Metal Abrasive Blast) or SSPC-SP WJ-2 M /NACE WJ-2/M (UHPWJ Very Thorough Cleaning, Moderate Flash Rust) or SSPC-SP 10 (WAB) M/NACE WAB-2/M, (Near-White Metal Wet Abrasive Blast Cleaning, Moderate Flash Rust).

(b) TOUCH-UP – SSPC-SP11 Power Tool Clean to Bare Metal areas requiring touch-up. Clean and abrade 1" to 2" of coating surface adjacent to touch-up areas with 80 grit sandpaper (or equivalent) to create tie-in and promote adhesion prior to recoating.

(c) PROFILE (ASTM D4417, Methods B or C): MIN. 2 mils MAX. 4 mils

(d) SPECIAL INSTRUCTIONS: Profile 2 - 4 mils recommended, up to 5 mils acceptable.

(e) PRIMER REQUIREMENTS: Sherwin-Williams SeaGuard 5000 HS (or other approved Sherwin-Williams MIL-PRF-24647 epoxy primer)

(f) MAXIMUM ALLOWABLE CONDUCTIVITY (Conductivity samples shall be collected using a product that meets the requirements of NACE SP0508-2010, "Methods of Validating Equivalence to ISO 8502-9 on Measurement of the Levels of Soluble Salts."):

For immersed areas maximum conductivity is 30 micro-siemens/cm.

(g) MAXIMUM DEGREE OF FLASH RUSTING ALLOWED: Moderate as defined in SSPC-SP WJ-2 M /NACE WJ-2/M (UHPWJ Very Thorough Cleaning, Moderate Flash Rust) or SSPC-SP 10 (WAB) M/NACE WAB-2/M, (Near-White Metal Wet Abrasive Blast Cleaning, Moderate Flash Rust).

SPECIAL SAFETY PRECAUTIONS:
See Material Safety Data Sheet or Globally Harmonized System Safety Data Sheet

V. MIXING PROCEDURES:

(a) MIXING RATIOS BY WEIGHT: N/A
BY VOLUME: N/A

(b) INDUCTION TIME: None

(c) RECOMMENDED CLEANING SOLVENT (NO THINNING ALLLOWED): VM&P Naphtha (R1K3) or High Flash Naphtha 100

(d) POT LIFE: N/A

(e) SPECIAL INSTRUCTIONS: Mix contents thoroughly using power agitation. Make certain no pigments remain on the bottom or sides of the can.

VI. APPLICATION:

(a) ENVIRONMENTAL LIMITATIONS:

SUBSTRATE TEMPERATURE: MIN. 40ºF MAX. 100ºF
AMBIENT TEMPERATURE: MIN. 40ºF MAX. 100ºF
MINIMUM SUBSTRATE TEMPERATURE DIFFERENCE ABOVE THE DEW POINT: 5ºF
MAXIMUM PERCENT RELATIVE HUMIDITY: 85%

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

PER COAT:
WET MIN. 8 mils WET MAX. 11 mils
DRY MIN. 5 mils DRY MAX. 7 mils

TOTAL SYSTEM: Typical specification is 3 coats of SeaVoyage Copper Free AF at 5-7 dry mils per coat. Below film thickness does not take into account epoxy primer.
DRY MIN. 15 mils DRY MAX. 21 mils

(c) DRY TIMES (ASTM D1640) – See graphs below including Minimum Cure to Recoat/Handle Time and Minimum Cure to Undocking Time. There is no Maximum Cure to Recoat graph.

(d) EQUIPMENT REQUIREMENTS: Airless spray, brush, roll

(e) SPECIAL INSTRUCTIONS:

For antifouling (AF), commence application of the first coat of AF when the SeaGuard 5000 HS is tack free (epoxy can be lightly touched with no paint coming off on the fingertips) and no later than when the SeaGuard 5000 HS is still tacky (soft to finger pressure). If the SeaGuard 5000 HS has cured beyond the tacky state (ie is no longer soft to finger pressure), apply another 1-2 wet mil coat of epoxy (following the recoat intervals) and then commence application of the AF as above. Failure to apply the AF to the SeaGuard 5000 HS as detailed above may result in loss of adhesion

For underwater hull applications, it is acceptable to launch based on the cure to immersion/undock time of the antifoulant.

Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance. Dry times are normally a function of humidity, ventilation, and temperature. Information given is to be used as a guideline only.

IF THE OVERCOAT WINDOW HAS BEEN EXCEEDED FOR CRITICAL APPLICATIONS: Rinse using high pressure (~3000 psi), fresh water cleaning, which will also remove any weak outer layer of leached or chalked antifouling. Allow the surface to dry before overcoating.

IF THE OVERCOAT WINDOW HAS BEEN EXCEEDED FOR NON-CRITICAL APPLICATIONS: Rinse using high pressure (~3000 psi), fresh water cleaning, which will also remove any weak outer layer of leached or chalked antifouling. Allow the surface to dry before overcoating.

ADDITIONAL DATA/ INSTRUCTIONS:

I. GENERIC TYPE AND DESCRIPTION

II. MANUFACTURERS DATA:

III. PROPERTIES:

IV. SURFACE PREPARATION MINIMUM REQUIREMENTS:

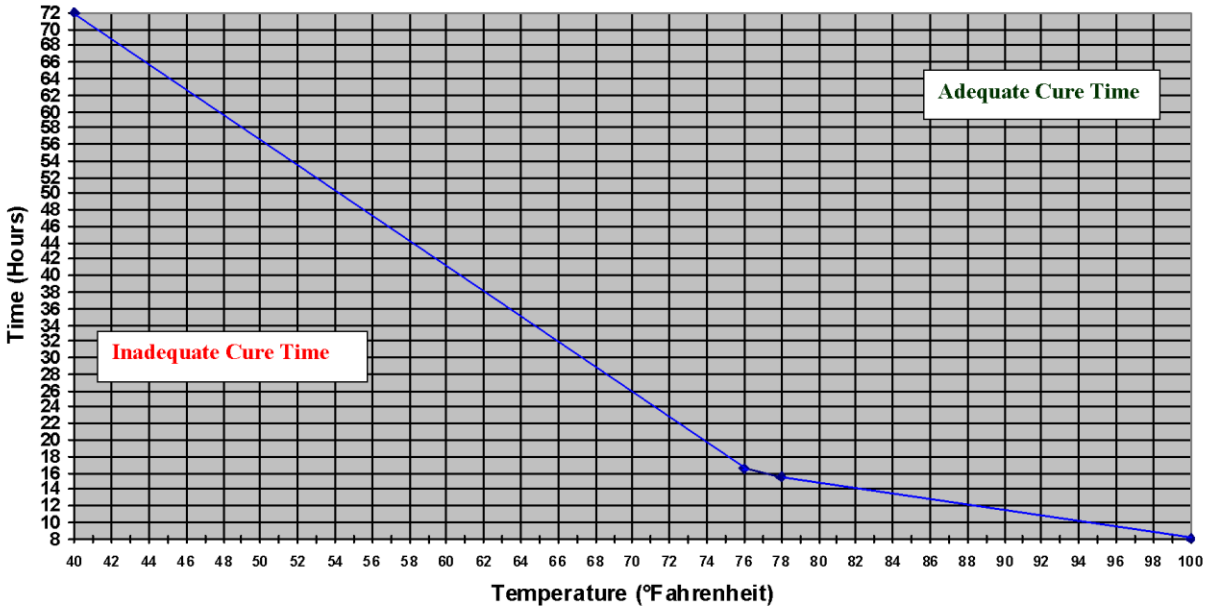
V. MIXING PROCEDURES:

VI. APPLICATION:

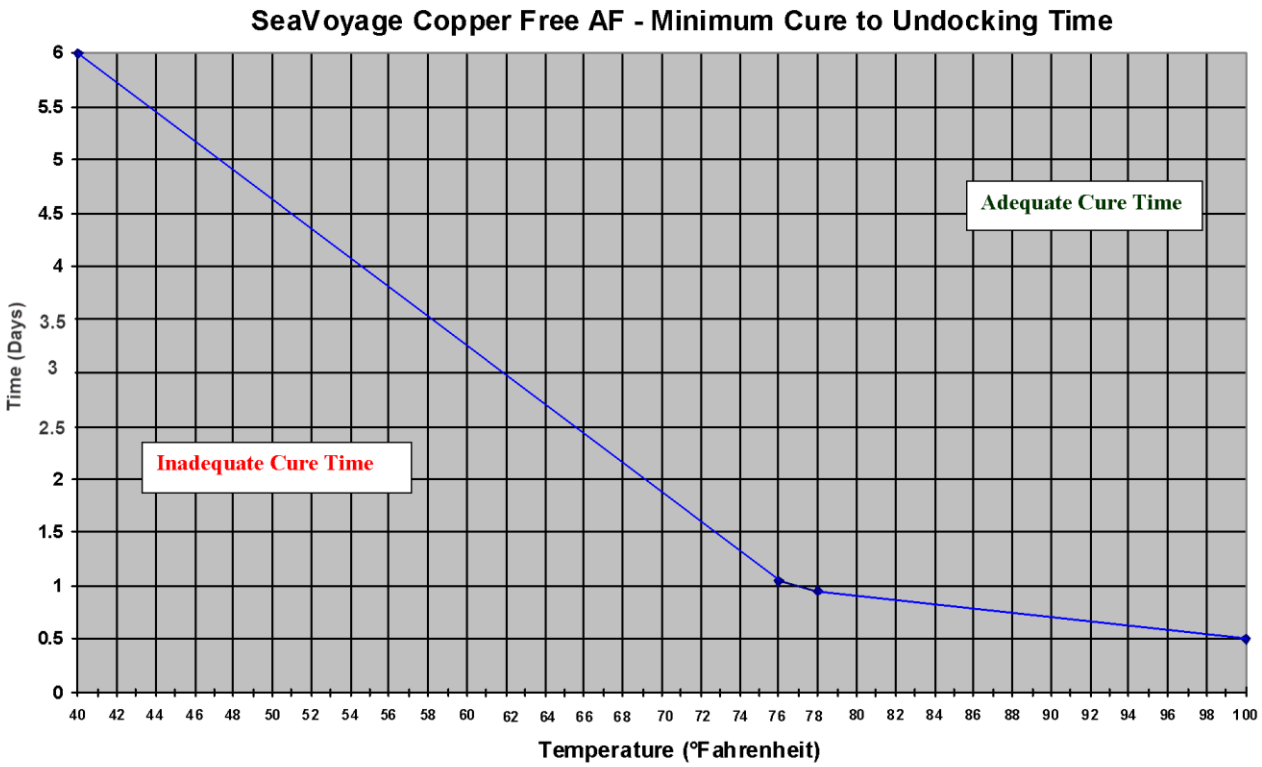
WARRANTY DISCLAIMER: DRY TIMES ARE NORMALLY A FUNCTION OF HUMIDITY, VENTILATION, AND TEMPERATURE. INFORMATION GIVEN IS TO BE USED AS A GUIDELINE ONLY. THE TECHNICAL DATA GIVEN HEREIN HAS BEEN COMPILED FOR THE ASSISTANCE OF THE USER AND GUIDANCE IS BASED ON THE EXPERIENCE AND KNOWLEDGE OF THE MANUFACTURER. HOWEVER, AS THE MANUFACTURER HAS NO CONTROL OVER THE USE OF THIS INFORMATION, NO WARRANTY EXPRESSED OR IMPLIED IS INTENDED OR GIVEN.

SeaVoyage Copper Free AF - Minimum Cure to Recoat & Handle Time

(note minimum cure to recoat and handle time are the same)



The above curing schedule is at 4.0 mils wet and 50% relative humidity.
Drying time is temperature, humidity, and film thickness dependent.
The above information is provided for guideline use only.



The above curing schedule is at 4.0 mils wet and 50% relative humidity.
Drying time is temperature, humidity, and film thickness dependent.
The above information is provided for guideline use only.