Protective & Marine Coatings

SEAVOYAGE® COPPER FREE ANTIFOULING PAINT

RED	N51R301
BLACK	N51B301

Revised: February 5, 2013

PRODUCT INFORMATION

9.17

PRODUCT DESCRIPTION

SEAVOYAGE COPPER FREE ANTIFOULING PAINT is a solvent based, copper and tin free ablative antifoulant coating that deters soft and hard fouling.

- Contains unique metal free organic biocide technology to comply with IMO ban on coatings containing TBT
- Biocides are non-persistent in the environment
- Low VOC to comply with environmental regulations
- EPA Registration Number: 577-570
- Qualified to MIL-PRF-24647, Type I, Class 1 and 2, Grade A and B, Application 1

RECOMMENDED USES

- Where a no copper discharge level antifoulant is required
- Where a tin free, copper free, heavy metal free antifoulant is required
- Where a low weight antifoulant is required. This product weighs approximately 2/3 that of traditional copper based antifoulants
- Can be used over prepared existing antifouling systems
- Acceptable for use on aluminum hulls
- Service life of the coating is proportional to film thickness

PRODUCT CHARACTERISTICS

Finish:	Matte
Color:	Red and Black
Volume Solids:	65% ± 2%
Weight Solids:	75% ± 2%
VOC (EPA Method 24):	<340 g/L; 2.8 lb/gal

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	**4.5** (113)	**9.0** (225)
Dry mils (microns)	**3.0** (75)	**6.0*** (150)
~Coverage sq ft/gal (m^2/L)	**175** (4.3)	**350** (8.6)
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.

*See Performance Tips

Drying Schedule @ 4.0 mils wet (100 microns):

	@ 40°F/4.5°C	@ 77°F/25°C *50% RH*	@ 100°F/38°C
To recoat:	72 hours	16 hours	8 hours
To undock:	6 days	24 hours	12 hours

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

Shelf Life:	24 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C)
Flash Point:	102°F (39°C) PMCC
Reducer/Clean Up:	VM&P Naphtha, R1K3 or High Flash Naphtha 100

PERFORMANCE CHARACTERISTICS

Test Name	Test Method	Results
Adhesion	ASTM D4541-02	900 psi
Four year Fouling Rating	ASTM D3623, Total immersion, Seawater, Ponce Inlet, FL	Rating 10 for general performance, Mollusks, Bryozoans, Amphipoda; Trace (<1% coverage) Barnacles, Anvelids, Hydroids, Algae

Biocides

- Are non-persistent in the environment
- Low solubility in water
- Controls fouling organisms without the environmental impact to water quality or sediment associated with traditional metal based antifoulants
- Product controls a broad spectrum of fouling
- Service life of the coating is proportional to film thickness
- Three hour hydrolytic half-life in seawater @ 77°F/25°C
- Can be specified for dry-dock intervals up to 5 years

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RECOMMENDED SYSTEMS

		Dry Film Thickness / ct. Mils	(Microns)
Steel and Aluminum:			
2 cts.	SeaGuard 5000 HS	4.0-8.0	(100-200)
2-3 cts.	SeaVoyage Copper Free AF	3.0-6.0*	(75-150)

Other acceptable primers:
SeaGuard 6000
Macropoxy 646

Aluminum:

1 ct.	SeaGuard MP	3.0-4.0	(75-100)
1 ct.	SeaGuard 5000 HS	4.0-8.0	(100-200)
2-3 cts.	SeaVoyage Copper Free AF	3.0-6.0*	(75-150)

*The SeaVoyage Copper Free Antifouling Paint must be applied over the epoxy primer, while the epoxy is still slightly tacky.

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: SSPC-SP10, 2 mil (50 micron) profile

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: 40°F (4.5°C) minimum, 100°F (38°C) maximum
(air, surface, and material)
At least 5°F (2.8°C) above dew point

Relative humidity: 85% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging: 1 gallon (3.78L) and 5 gallon (18.9L) containers

~Weight: 12.5 ± 0.5 lb/gal ; ~1.5 Kg/L

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.

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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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

Minimum surface preparation is Near White Metal Blast per SSPC-SP10. Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils / 50 microns). Remove all weld spatter and round all sharp edges by grinding. For surfaces prepared per SSPC-SP12/NACE No.5 , all surfaces to be coated shall be cleaned in accordance with WJ-2. Pre-existing profile should be approximately 2 mils (50 microns). Prime any bare steel within 8 hours or before flash rusting occurs.

Previously Painted Antifouling Surfaces

Remove possible oil, grease, etc. with suitable detergent. Rinse using high pressure, fresh water cleaning, which will also remove any weak, outer layer of leached antifouling. Allow the surface to dry before over coating. Whether or not to use a sealer coat over an existing antifouling depends on the type and condition of existing antifouling coatings.

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:	40°F (4.5°C) minimum, 100°F (38°C) maximum (air, surface, and material) At least 5°F (2.8°C) above dew point
Relative humidity:	85% maximum

APPLICATION EQUIPMENT

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

Reducer/Clean Up .....VM&P Naphtha, R1K3 or High Flash Naphtha 100

Airless Spray

Unit.....Graco 45:1
Pressure.....3200 psi minimum
Hose.....3/8" ID
Tip .....019" - .021"
Filter .....30 mesh
Reduction.....As needed up to 5% by volume

Conventional Spray

Gun .....Binks 95
Fluid Nozzle 66
Fluid Hose.....1/2" ID, 50 ft maximum
Air Nozzle.....63 PB
Air Hose .....1/2" ID, 50 ft maximum
Atomization Pressure.....25 psi
Fluid Pressure.....10-20 psi
Reduction.....As needed up to 5% by volume

Brush

Brush.....Natural Bristle
Reduction.....As needed up to 5% by volume

Roller

Cover .....3/8" woven with solvent resistant core
Reduction.....As needed up to 5% by volume

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

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APPLICATION BULLETIN

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APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mixing Instructions: Mix paint thoroughly to a uniform consistency with low speed power agitation prior to use.

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** (113)	**9.0** (225)
Dry mils (microns)	**3.0** (75)	**6.0*** (150)
~Coverage sq ft/gal (m^2/L)	**175** (4.3)	**350** (8.6)
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NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

*See Performance Tips

Drying Schedule @ 4.0 mils wet (100 microns):

	@ 40°F/4.5°C	@ 77°F/25°C *50% RH*	@ 100°F/38°C
To recoat:	72 hours	16 hours	8 hours
To undock:	6 days	24 hours	12 hours

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 VM&P Naphtha, R1K3 or High Flash Naphtha 100. Clean tools immediately after use with VM&P Naphtha, R1K3 or High Flash Naphtha 100. Follow manufacturer's safety recommendations when using any solvent.

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PERFORMANCE TIPS

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.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Xylene (R2K4).

Excessive reduction of materials can affect film build, appearance, and performance.

When applying over a recommended epoxy primer, apply within 2 to 4 hours @ 77°F and 50% RH. The epoxy should be overcoated when it is tacky, but not hard.

Undocking:
Minimum undocking time depends on number of coats applied, film thickness, and the prevailing temperature.

Maximum undocking time depends on the exposure conditions, degree of air pollutions, etc. The most important factor is to carry out a thorough high pressure fresh water cleaning after prolonged exposure. Out fitting of up to 6 months followed by such cleaning normally presents no problem. Longer outfitting periods to be evaluated from case to case. The recommended maximum undocking interval relates to vertical bottom only. Flat bottom, which has not be exposed to direct sunlight, will for all normal practical building schedules have a no-maximum value.

* Dry film thickness is based on the ships sailing, speed, activity level, dry dock interval, and trading patterns.

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

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