Protective & Marine Coatings

SEAGUARD® UNIVERSAL PRIMER

N41R635	Red Oxide
N41A635	Gray
N41W635	Off White

Revised 10/09

Product Information

9.02

Product Description

SEAGUARD UNIVERSAL PRIMER is a fast drying, high solids, low VOC, heavy metal free, rust inhibitive, universal, metal primer for marine and offshore applications. Can be topcoated with alkyd, acrylic, and high performance coatings, such as epoxies urethanes.

- High build to protect abrasive blasted steel
- Good corrosion and rust protection
- Can be used as a "universal" primer for alkyd, acrylic, epoxy and other topcoats.
- Fast drying
- Outstanding application properties

Product Characteristics

Finish:	Flat
Color:	Red Oxide, Gray, Off White
Volume Solids:	61% ± 2%, may vary by color
Weight Solids:	79% ± 2%, may vary by color
VOC (EPA Method 24):	Unreduced: <320 g/L; 2.65 lb/gal Reduced 5%: <340 g/L; 2.80 lb/gal

Recommended Spreading Rate per coat:

	Minimum		Maximum	
Wet mils (microns)	**3.0**	75	**8.0**	200
Dry mils (microns)	**2.0**	50	**5.0**	125
~Coverage sq ft/gal (m^2/L)	**195**	4.8	**490**	12.0
Theoretical coverage sq ft/gal (m^2/L) @ 1 mil / 25 microns dft	**976**	23.9		

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

Drying Schedule @ 4.0 mils wet (100 microns):

	@ 40°F/4.5°C	@ 77°F/25°C *50% RH*	@ 120°F/49°C
To touch:	1 hour	30 minutes	10 minutes
Tack free:	3 hours	60 minutes	15 minutes
To recoat with:			
Alkyd	6 hours	2 hours	1 hour
Urethane	24 hours	24 hours	6 hours
Acrylic	48 hours	24 hours	6 hours
To cure:	5 days	2 days	1 day

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

Shelf Life:	36 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C)
Flash Point:	90°F (32°C), PMCC
Reducer/Clean Up:	Xylene, R2K4

Recommended Uses

For Marine and Offshore applications on steel to protect against atmospheric corrosion. Interior/exterior use. For use under a variety of coatings, including high performance topcoats.

- Machinery and equipment
- Piping and pipe racks
- Bulkheads
- Railings

Performance Characteristics

Substrate*: Steel

Surface Preparation*: SSPC-SP2

System Tested*:

1 ct. SeaGuard Universal Primer @ 3.0 mils (75 microns) dft
1 ct. SeaGuard 1000 Marine Enamel @ 3.0 mils (75 microns) dft
*unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 500 cycles, 500 gm load	46 mg loss
Adhesion	ASTM D4541	392 psi
Direct Impact Resistance (primer only)	ASTM D2794	60 in. lbs.
Dry Heat Resistance (primer only)	ASTM D2485	250°F (121°C) (discolors)
Exterior Durability	1 year at 45° South	Excellent
Flexibility (primer only)	ASTM D522, 180° bend, 1" mandrel	Passes
Moisture Condensation Resistance	ASTM D4585, 100°F (38°C), 500 hours	No blisters, rust, delamination, or creepage
Pencil Hardness	ASTM D3363	H
Salt Fog Resistance	ASTM B117, 500 hours	No softening, cracking, or delamination; No more than 1/32" rust creepage at scribe
Thermal Shock	ASTM D2246, 15 cycles	Passes

continued on back

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Recommended Systems

		Dry Film Thickness / ct. Mils	(Microns)
Steel, Alkyd Topcoat:			
1 ct.	SeaGuard Universal Primer	2.0-5.0	(50-125)
1-2 cts.	SeaGuard 1000 Marine Enamel	2.0-4.0	(50-100)
Steel, Aluminum Finish:			
1 ct.	SeaGuard Universal Primer	2.0-5.0	(50-125)
1-2 cts.	Silver-Brite Aluminum	1.0-1.5	(25-40)
Steel, Epoxy Topcoat:			
1 ct.	SeaGuard Universal Primer	2.0-5.0	(50-125)
1-2 cts.	SeaGuard 5000 HS	2.5-4.0	(63-100)
Steel, Acrylic Topcoat:			
Topcoat only after 24 hours minimum dry @ 77°F & 50% RH			
1 ct.	SeaGuard Universal Primer	2.0-5.0	(50-125)
1-2 cts.	SeaGuard 1224	2.0-3.0	(50-75)
Steel, Polyurethane Topcoat:			
1 ct.	SeaGuard Universal Primer	2.0-5.0	(50-125)
1-2 cts.	SeaGuard Urethane	2.5-5.0	(63-125)

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: SSPC-SP2

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, 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:	1 gallon (3.78L) and 5 gallon (18.9L) containers
Weight:	13.26 ± 0.2 lb/gal ; 1.60 Kg/L, Red Oxide 13.70 ± 0.2 lb/gal ; 1.64 Kg/L, Off White

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

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Surface Preparations

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Iron & Steel
Minimum surface preparation is Hand Tool Clean per SSPC-SP2. Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. For better performance, use Commercial Blast Cleaning per SSPC-SP6, 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.

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:	40°F (4.5°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 .....Xylene, R2K4

Airless Spray
Pressure.....1800 psi minimum
Hose.....1/4 -3/8" ID
Tip.....017" - .019"
Filter.....60 mesh
Reduction.....As needed up to 5% by volume

Conventional Spray ..... Not recommended

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

Roller
Cover .....1/4 - 3/8" woven with solvent resistant core
Reduction.....Not recommended

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

continued on back

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9.02

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)	**3.0** 75	**8.0** 200
Dry mils (microns)	**2.0** 50	**5.0** 125
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NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

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To cure:	5 days	2 days	1 day

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 Xylene, R2K4. Clean tools immediately after use with Xylene, R2K4. Follow manufacturer's safety recommendations when using any solvent.

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Performance Tips

Stripe coat all crevices, welds, and sharp angles to prevent early failure in these areas.

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross spray at a right angle.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

Excessive reduction of material can affect film build, appearance, and adhesion.

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

Intimate contact of the steel surface and primer is necessary for adhesion and rust inhibition.

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

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