

## SELECTION & SPECIFICATION DATA

<b>Generic Type</b>	Single package silicone finish
<b>Description</b>	High-performance finish for areas exposed to extreme temperatures. Suitable for service from 400°F-1004°F (204°C-540°C) Color stability at maximum temperature will depend on color selected.
<b>Features</b>	<ul style="list-style-type: none"> <li>• Resistant to severe thermal shock</li> <li>• Provides outstanding long-term performance when applied over Carbozinc inorganic zinc primers</li> <li>• Provides barrier protection prior to heat curing (full film physical properties occur after heat curing)</li> </ul>
<b>Color</b>	<p>Available in the following stock colors:            Black (C900) 1004°F (540°C) Continuous            Black allow surges to 1200°F (649°C)            Gray (C705) 750°F (399°C)            All other colors are made to order and have maximum temperature resistance of 750°F (399°C).            See separate data sheet for aluminum (Thermaline 4700 Aluminum).</p>
<b>Finish</b>	<p>Gloss            Initially (flat after heat curing)</p>
<b>Primer</b>	Inorganic zincs. None needed for stainless steel or aluminum.
<b>Dry Film Thickness</b>	<p>1.5 - 2 mils (38 - 51 microns) per coat            Do not exceed 2.0 mils (51 microns) in a single coat. One or two coats are typical. Two coats are recommended over stainless steel.</p>
<b>Solids Content</b>	By Volume 48% +/- 2%
<b>Theoretical Coverage Rate</b>	<p>770 ft<sup>2</sup>/gal at 1.0 mils (18.9 m<sup>2</sup>/l at 25 microns)            513 ft<sup>2</sup>/gal at 1.5 mils (12.6 m<sup>2</sup>/l at 38 microns)            385 ft<sup>2</sup>/gal at 2.0 mils (9.4 m<sup>2</sup>/l at 50 microns)            Allow for loss in mixing and application.</p>
<b>VOC Values</b>	<p><b>As Supplied</b> : 3.8 lbs./gal (456 g/l)            Thinner 235 : 12.8 oz/gal: 4.1 lbs./gal (492 g/l)            These are nominal values and may vary slightly with color.</p>
<b>Limitations</b>	<ul style="list-style-type: none"> <li>• Do not use for immersion service.</li> <li>• Do not exceed thickness recommendation.</li> <li>• Excessive film thickness may result in blistering and delamination when the temperature is increase</li> </ul>

## SUBSTRATES & SURFACE PREPARATION

<b>General</b>	Remove all contaminants in accordance with SSPC-SP1.
<b>Steel</b>	Follow surface preparation for recommended or specified primer. When using direct to steel surfaces abrasive blast to minimum NACE No. 2/SSPC-SP10 with a 0.5 to 1.0 mil (12-25 microns) surface profile.
<b>Aluminum</b>	Clean and abrade per SSPC-SP 16 to achieve 0.5 to 1.0 mil (12 to 25 microns) surface profile.

## SUBSTRATES & SURFACE PREPARATION

**Stainless Steel** | Clean and abrade per SSPC-SP 16 to achieve a 0.5 to 1.0 mil (12-25 microns) surface profile.

## MIXING & THINNING

**Mixing** | Power mix until uniform in consistency. Avoid air entrapment.

**Thinning** | Normally not required. May be thinned up to 32 oz./gal. (25%) by volume with Thinner #235 for "hot" applications exceeding 150°F (66°C) and for mist coating. Use of thinners other than those supplied or recommended by Carboline may adversely affect product performance and void product warranty, whether expressed or implied.

## APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

**Spray Application (General)** | The following spray equipment has been found suitable for application of this material. Conventional spray application is preferred.  
**Note:** Different application procedures or methods may result in non-uniform appearance.

**Conventional Spray** | Use DeVilbiss P-MBC, E-needle and tip, and a 704 air cap or equal. Use adequate air volume for proper equipment operation. Hold gun 10-12" from the surface and at right angles. Overlap each pass 50%. Apply 4.0 wet mils to obtain desired dry film.

**Airless Spray** | Pump Ratio: \*30:1  
GPM Output: \*3.0  
Material Hose: 1/4" I.D. (6.4 mm) minimum  
Tip Size: \*0.011" - 0.015"  
Output PSI: \*1,800 - 2,700  
Filter: \*60 mesh

\*The equipment details listed above are intended to be used as guidelines. We recommend adjusting spray equipment and techniques as needed to provide the correct dry film thickness and the desired appearance. PTFE packings are recommended and available from equipment manufacturers.

**Brush & Roller (General)** | Recommended for touch up of small areas or where spray application is not permitted. Avoid excessive brushing or rolling as this may result in a non-uniform appearance.

**Brush** | Use a medium bristle brush.

**Roller** | Use a short-nap mohair roller cover with solvent-resistant core.

## APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	55°F (13°C)	40°F (4°C)	40°F (4°C)	0%
Maximum	95°F (35°C)	300°F (149°C)	120°F (49°C)	90%

This product simply requires the substrate temperature to be above the dew point. Condensation due to substrate temperatures below the dew point can cause flash rusting on prepared steel and interfere with proper adhesion to the substrate.

## CURING SCHEDULE

Surface Temp.	Dry to Touch	Dry to Topcoat with Itself	Dry to Handle
75°F (24°C)	1 Hour	4 Hours	8 Hours

These times are based on a 2.0 mil (51 microns) dry film thickness. Higher film thickness, insufficient ventilation or cooler temperatures will require longer cure times and could result in solvent entrapment and premature failure. Excessive humidity or condensation on the surface during curing can interfere with the cure and may cause discoloration. During high humidity conditions, it is recommended that the application be done while temperatures are increasing. If the final cure time is exceeded, the surface must be abraded prior to the application of additional coats.

Full physical properties will be reached when heat curing has been completed. After a 2 hour flash off at 75°F (24°C), allow temperature to increase at a maximum rate of 2°F per minute to 400°F (204°C). Hold at 350°F to 450°F (177°C to 232°C) for 2 hours.

## CLEANUP & SAFETY

<b>Cleanup</b>	Use Thinner 2. In case of spillage, absorb and dispose of in accordance with local applicable regulations.
<b>Safety</b>	Read and follow all caution statements on this Product Data Sheet and on the SDS for this product. Employ normal workmanlike safety precautions. Hypersensitive persons should wear protective clothing, gloves and use protective cream on face, hands and all exposed areas.
<b>Ventilation</b>	When used in enclosed areas, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved respirator.

## PACKAGING, HANDLING & STORAGE

<b>Shelf Life</b>	Shelf Life: 24 months at 77°F (25°C) *Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.
<b>Storage Temperature &amp; Humidity</b>	Between 40°F-100°F(4°C-38°C) 0-90% Humidity
<b>Storage</b>	Store Indoors.
<b>Shipping Weight (Approximate)</b>	1 Gallon Kit - 12 lbs. (5.5 kg) 5 Gallon Kit - 60 lbs. (27 kg)
<b>Flash Point (Setaflash)</b>	83°F (28°C)

# Thermaline<sup>®</sup> 4700

## PRODUCT DATA SHEET

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### WARRANTY

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To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline Company to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. We guarantee our products to conform to Carboline quality control. We assume no responsibility for coverage, performance, injuries or damages resulting from use. Carbolines sole obligation, if any, is to replace or refund the purchase price of the Carboline product(s) proven to be defective, at Carbolines option. Carboline shall not be liable for any loss or damage. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated.