

SELECTION & SPECIFICATION DATA

Generic Type	Single-package silicone finish
Description	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.
Features	<ul style="list-style-type: none"> • Resistant to severe thermal shock • Provides outstanding long-term performance when applied over Carbozinc inorganic zinc primers • Provides barrier protection prior to heat curing (full film physical properties occur after heat curing) • VOC compliant
Color	<p>Black (C900), Grey (C705)</p> <p>C900 (Black) withstands 1004°F (540°C) continuous with surges to 1200°F (649°C). Maximum temperature resistance of 750°F (399°C) for all other colors. See separate data sheet for C901 (Aluminum), Thermaline 4700 VOC Aluminum. Other colors may be available upon request. Contact your Carboline representative for more details.</p>
Finish	<p>Gloss</p> <p>Initially (Flat after heat cure)</p>
Primer	Inorganic zincs or silicone zinc. None needed for stainless steel or aluminum.
Dry Film Thickness	<p>1.5 - 2 mils (38 - 51 microns) per coat</p> <p>Do not exceed 2.0 mils (51 mils) in a single coat. One or two coats are typical. Two coats are recommended over stainless steel.</p>
Solids Content	By Volume 57% +/- 2%
Theoretical Coverage Rate	<p>914 ft²/gal at 1.0 mils (22.4 m²/l at 25 microns)</p> <p>610 ft²/gal at 1.5 mils (15.0 m²/l at 38 microns)</p> <p>457 ft²/gal at 2.0 mils (11.2 m²/l at 50 microns)</p> <p>Allow for loss in mixing and application.</p>
VOC Value(s)	<p>Per EPA Method 24: 2.6 lbs./gal (312 g/l)</p> <p>16.0 oz/gal of Thinner 236 E (12.5% thinned): 2.6 lbs/gal (312 g/l)</p> <p>These are nominal values and may vary slightly with color. This product contains US EPA VOC-exempt solvent(s).</p>
Limitations	<ul style="list-style-type: none"> • Do not use for immersion service. • Do not exceed thickness recommendation. • Excessive film thickness may result in blistering and delamination when the temperature is increased.

SUBSTRATES & SURFACE PREPARATION

General	Remove all contaminants in accordance with SSPC-SP1.
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SUBSTRATES & SURFACE PREPARATION

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

MIXING & THINNING

Mixing	Power mix until uniform in consistency. Avoid air entrapment.
Thinning	<p>Normally not required. May be thinned up to 32 oz./gal. (25%) by volume with Thinner 236E for "hot" applications exceeding 150 °F (66 °C) and for mist coating. Thinner #230 may also be used where VOC restrictions do not prohibit its use.</p> <p>WARNING: These levels of thinning may exceed VOC allowances in certain areas. Check your local VOC regulations pertaining to High Temperature Coatings before thinning to ensure compliance.</p> <p>Use of thinners other than those supplied or recommended by Carboline may adversely affect product performance and void product warranty, whether expressed or implied.</p>

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)	<p>The following spray equipment has been found suitable for application of this material. Conventional spray application is preferred.</p> <p>Note: Different application procedures or methods may result in non-uniform appearance.</p>
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 3.0-3.5 wet mils to obtain desired dry film.
Airless Spray	<p>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</p> <p>*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.</p>
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	Dry to Handle
77°F (25°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

Cleanup	Use Thinner 2. In case of spillage, absorb and dispose of in accordance with local applicable regulations.
Safety	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.
Ventilation	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 ensure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved respirator.

PACKAGING, HANDLING & STORAGE

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.
Storage Temperature & Humidity	Between 40-100 °F (4-38 °C) 0-90% Humidity
Storage	Store Indoors
Shipping Weight (Approximate)	1 Gallon - 13 lbs. (5.9 kg) 5 Gallon - 64 lbs. (29 kg)
Flash Point (Setaflash)	87 °F (31 °C)

Thermaline[®] 4700 VOC

PRODUCT DATA SHEET



WARRANTY

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 to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. Carboline warrants our products to be free of manufacturing defects in accord with applicable Carboline quality control procedures. THIS WARRANTY IS NOT VALID WHEN THE PRODUCT IS NOT: (1) APPLIED IN ACCORDANCE WITH CARBOLINE'S SPECIFICATIONS, AND/OR (2) PROPERLY STORED, CURED, AND USED UNDER NORMAL OPERATING CONDITIONS. Carboline assumes no responsibility for coverage, performance, injuries, or damages resulting from use of the product. If this product is found not to perform as specified upon inspection by a Carboline representative during the warranty period, Carboline's sole obligation, if any, is to replace the Carboline product(s) proven to be defective or refund the purchase price thereof, at Carboline's sole option. Carboline shall not be liable for any other losses or damages. This warranty excludes (1) labor and costs of labor for the application or removal of any product, and (2) any incidental or consequential damages, whether based on breach of express or implied warranty, negligence, strict liability or any other legal theory. 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. The whole text of this Product Data Sheet, as well as the documents derived from it, have been written in English, and for legal purposes the English version shall prevail.