

SELECTION & SPECIFICATION DATA

Generic Type	Inorganic Zinc Silicate
Description	Time -tested corrosion resistant coating that provides excellent galvanic corrosion protection to steel in some of the harshest environments. For over five decades, Carbozinc 11 has been the industry standard for high-performance inorganic zinc protection on steel structures worldwide. Carbozinc 11 VOC is simply a lower VOC version of the original Carbozinc 11 with VOC of 389 g/l as supplied.
Features	• Meets Class B slip co-efficient and creep testing criteria for use on faying surfaces. • Rapid cure. Dry to handle in 1 hour at 75°F (24°C) and 50% relative humidity. • Low temperature cure down to 0°F (-18°C). • High zinc loading. • Approved for MPI #19. • Meets FDA requirements. • Zinc supplied meets ASTM D520, Type II.* • Meets SSPC Paint 20 Type I, Level 1 for zinc content. • Very good resistance to salting. • May be applied with standard airless or conventional spray equipment. • VOC compliant in most areas. *Type III zinc dust is available upon special order.
Color	Green (0300) or Gray (0700)
Finish	Flat
Primer	Self Priming
Service Temperature	<u>Untopcoated</u> Continuous: 750°F (400°C) Non-Continuous: 800°F (427°C) <u>With recommended high heat topcoats:</u> Continuous: 1000°F (538°C) Non-Continuous: 1200°F (649°C)
Dry Film Thickness	2 - 3 mils (51 - 76 microns) . Dry film thickness in excess of 6.0 mils (150 microns) is not recommended.
Total Zinc Dust in Dry Film	By Weight: 85%
Solids Content	By Volume 76% +/- 2% Measured in accordance with ASTM D 2697.
Theoretical Coverage Rate	1219 ft²/gal at 1.0 mils (29.9 m²/l at 25 microns) 610 ft²/gal at 2.0 mils (15.0 m²/l at 50 microns) 406 ft²/gal at 3.0 mils (10.0 m²/l at 75 microns) Allow for loss in mixing and application.

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VOC Values	Thinner 33 : 20 oz/gal: 3.77 lbs/gal (451 g/l) Thinner 26 : 20 oz/gal: 3.79 lbs/gal (454 g/l) As Supplied : EPA Method 24: 3.20 lbs/gal (389 g/l) These are nominal values. 20 oz/gal w/ Thinner 237: 3.62 lbs/gal (434 g/l)
Topcoats	Not required for certain exposures. May be coated with Waterborne Acrylics, Epoxies, Polyurethanes, High-Temperature Silicones and other coatings as recommended by Carboline. Under certain conditions a mist coat may be required to minimize topcoat bubbling.

SUBSTRATES & SURFACE PREPARATION

General	Surfaces must be clean and dry. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating.
Steel	<u>Non-Immersion</u> : SSPC-SP6 to obtain an angular blast profile of 1.0-3.0 mils (25-75 microns).

PERFORMANCE DATA

All test data was generated under laboratory conditions. Field testing results may vary.

Test Method	System	Results
ASTM B117 Salt Fog	Carbozinc 11 VOC	No blistering, rusting, or other effects on plane area except surface softening. No rusting or undercutting at scribe after 30,000 hours.
ASTM D1735 Water Fog	Carbozinc 11 VOC	No blistering or rust on plane area. No rusting or undercutting at scribe after 8760 hours.
ASTM G26 Weatherometer	Carbozinc 11 VOC	No blistering, softening, rusting or adhesion loss after 5000 hrs.
Bullet Hole Immersion	Carbozinc 11 VOC AASHTO M: 300-921 paragraph 4.69; 5% sodium chloride at 75°F, 650 hours.	No blistering of coating. No rusting of bare steel area.
Slip Co-Efficient	Carbozinc 11 VOC A-490 bolt spec; 6 mils dry film max.' 12 hr min cure time	Meets requirements for Class B rating at 0.66 Slip co-efficient and average creep of 0.0015.
Thermal Shock	Carbozinc 11 VOC Immerse in liquid nitrogen for 20 minutes, then quench in 124°F water for 3.5 minutes	No cracking or flaking, film remained intact.

MIXING & THINNING

Mixing	Power mix base, then combine and power mix as follows. Pour zinc filler very slowly into premixed base with continuous agitation. Mix until free of lumps. Pour mixture through a 30 mesh screen. DO NOT MIX PARTIAL KITS Tip: Sifting zinc through a window screen will aid in the mixing process by breaking up or catching dry zinc lumps.
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MIXING & THINNING

Thinning	Spray: May be thinned up to 20 oz/gal (16%) with Thinner 26, 33 or 237 for ambient and warm surfaces. For extremely warm or windy conditions, may be thinned up to 8 oz/gal (6%) with Thinner 254. Use of thinners other than those supplied by Carboline may adversely affect product performance and void product warranty, whether expressed or implied. Touch-Up: May be thinned up to 30% (38 oz) for small touch-up areas only by brush. Avoid re-brushing. Carboline Thinner 236E may also be used to thin this product to minimize HAP and VOC emissions. Consult Carboline Technical Service for guidance.
Ratio	<u>0.74 Gal Kit:</u> Part A - 1 gal (short filled), Zinc Filler - 14.6 lbs <u>3.7 Gal Kit:</u> Part A - 5 gals. (short filled), Zinc Filler - 73 lbs.
Pot Life	8 hours at 75°F (24°C) and less at higher temperatures. Pot life ends when coating becomes too viscous to use.

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 and is available from equipment manufacturers. Keep material under mild agitation during application. If spraying stops for more than 10 minutes, recirculate the material remaining in the spray line. Do not leave mixed coating in the hoses during work stoppages.
Conventional Spray	Agitated pressure pot equipped with dual regulators, 3/8" (0.95 cm) I.D. minimum material hose, with a maximum length of 50', .070" I.D. (0.18 cm) fluid tip and appropriate air cap.
Airless Spray	Pump Ratio: 30:1 (min.) GPM Output: 3.0 (min.) Material Hose: 3/8" I.D. (0.95 cm) minimum Tip Size: 0.017-0.021" (0.04 - 0.05 cm) Output PSI: 2100-2500 Filter Size: 60 mesh PTFE packings are recommended and available from the pump manufacturer.
Brush	For touch-up of areas less than one square foot only. Use medium bristle brush and avoid rebrushing.
Roller	Not recommended.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	0°F (-18°C)	0°F (-18°C)	0°F (-18°C)	30%
Maximum	130°F (54°C)	200°F (93°C)	130°F (54°C)	95%

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. Special application techniques may be required above or below normal application conditions.

CURING SCHEDULE

Surface Temp.	Dry to Handle	Dry to Topcoat	Final Cure Immersion
40°F (4°C)	4 Hours	2 Days	4 Days
60°F (16°C)	2 Hours	24 Hours	3 Days
75°F (24°C)	1 Hour	18 Hours	2 Days
90°F (32°C)	45 Minutes	16 Hours	36 Hours

These times are based on a 3.0 - 4.0 mil (75 - 100 microns) dry film thickness. Higher film thickness, insufficient ventilation and/or cooler temperatures will require longer cure times and could result in solvent entrapment and premature failure. Humidity levels below 50% will require longer cure times. **Notes:** Maximum recoat time is unlimited. Must have a clean, dry surface free of chalk, zinc salts, etc per typical good painting practices. Consult Carboline Technical Service for specific information. Also, loose zinc must be removed from the cured film by rubbing with fiberglass screen wire if: 1) The Carbozinc 11 VOC is to be used without a topcoat in immersion service and "zinc pick up" could be detrimental, or 2) When "dry spray/overspray" is evident on the cured film and a topcoat will be applied. For **accelerated curing or where the relative humidity is below 40%**, allow an initial 2-hour ambient cure followed by misting with clean potable water or steam to keep the coating wet for a minimum of 8 hours. The coating is considered cured sufficiently to topcoat and/or immersion service when the coating achieves a "2H" pencil hardness per ASTM D3363 or a minimum rating of 4 per ASTM D4752.

CLEANUP & SAFETY

Cleanup	Use Thinner 21 or Isopropyl Alcohol. 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.
Ventilation	When used as a tank lining or 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. In addition to ensuring proper ventilation, appropriate respirators must be used by all application personnel.

PACKAGING, HANDLING & STORAGE

Shelf Life	Part A: 12 months at 75°F (24°C) Part B: 24 months at 75°F (24°C) *Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.
Storage Temperature & Humidity	40° - 100°F (4-38°C) 0-90% Relative Humidity
Storage	Store Indoors. This product is solvent based and not affected by excursions below these published storage temperatures, down to 10°F, for a duration of no more than 14 days. Always inspect the product prior to use to make sure it is smooth and homogeneous when properly mixed.
Shipping Weight (Approximate)	.74 Gallon Kit - 22 lbs (10kg) 3.7 Gallon Kit - 103 lbs (47 kg)
Flash Point (Setaflash)	Part A: 55°F (13°C) Zinc Filler: NA

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.