

Selection Data

GENERIC TYPE : Modified silicone

GENERAL PROPERTIES : A single package high temperature coating that withstands continuous temperatures of 1000°F(538°C) and surges up to 1200°F(649°C)

- Exhibits outstanding thermal shock resistance from 100 0°F(538°C) to 32°F(0°C)
- May be applied directly to properly prepared steel and stainless steel. Application over Carbozinc primers will provide superior performance by preventing rusting and rust streaking during a shut down or when the equipment is exposed to moisture and/or salts at temperatures less than 200°F(93°C)
- Meets VOC(Volatile Organic Content) regulations of 5.4 lbs/gal (647 g/l) for high temperature coatings.
- Good abrasion resistance when cured per cure schedule.

RECOMMENDED USES : For coating exterior of stacks, breaching, furnaces, hot piping, mufflers, exhausts and other elevated temperature steel surfaces. Generally used where temperatures exceed 500°F(260°C)

NOT RECOMMENDED FOR : Use as a lining or in immersion service or exposure to splash and spillage of acids or alkalies.

CHEMICAL RESISTANCE GUIDE :

<u>Exposure</u>	<u>Splash & Spillage</u>	<u>Fumes</u>
Acids	Poor	Fair
Alkalies	Poor	Fair
Solvents	Good	Good
Salt	Poor	Very Good
water	Poor	Very Good

TEMPERATURE RESISTANCE : (Dry)

Continuous : 1000°F(538°C)

Non-Continuous : 1200°F(649°C)

SUBSTRATES : Properly prepared steel or other surfaces as recommended.

COMPATIBLE COATINGS : May be applied over inorganic zincs such as the Carbozinc series primers which will increase performance over steel. A mist coat may be required when applying over inorganic zincs to minimize bubbling.

Specification Data

THEORETICAL SOLIDS CONTENT OF MIXED MATERIAL :

	<u>By Volume</u>
Carboline 4631	30% ± 2%

VOLATILE ORGANIC CONTENT (VOC) : The following are nominal values :

As Supplied : 5.0 lbs/gal (599 g/l)

Thinned :

<u>Thinner</u>	<u>oz/gal</u>	<u>lbs/gal</u>	<u>g/l</u>
10	8	5.2	623
10	16	5.3	635

RECOMMENDED DRY FILM THICKNESS PER COAT :

11/2 mils (40μ) - Two coats are recommended over bare steel and one or two coats over inorganic zincs.

Excessive film thickness over inorganic zincs may result in blistering and delamination when the temperature is increased.

THEORETICAL COVERAGE PER MIXED GALLON :

481 mil ft² (12 m²/l at 25μ)

321 ft² at 11/2 mils (7.5 m²/l at 40μ)

Material losses during mixing and application will vary and must be taken into consideration when estimating job requirements.

STORAGE CONDITIONS : Store indoors.
Temperature : 40-110°F(4-43°C)
Humidity : 0-100%

SHELF LIFE : 12 months when stored indoors at 75°F(24°C)

COLORS : Aluminum (C901) only.

Color variations within a batch and from batch to batch may occur due to the metallic pigments and variation in application techniques and conditions.

Ordering Information

Prices may be obtained from Carboline Sales Representative or Carboline Customer Service.

APPROXIMATE SHIPPING WEIGHT :

	<u>1's</u>	<u>5's</u>
Carboline 4631	11 lbs.(5 kg)	51 lbs.(23 kg)
Carboline Thinner #10	8 lbs.(4 kg)	40 lbs.(18 kg)

FLASH POINT : (Setaflash)

Carboline 4631	68°F(20°C)
Carboline Thinner #10	83°F(28°C)

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Carboline® 4631

SURFACE PREPARATION : Remove all oil or grease from the surface to be coated with Thinner #2 or Carboline Surface Cleaner 3 (refer to Surface Cleaner 3 instructions) in accordance with SSPC-SP 1.

Steel : Abrasive blast to a Near White Finish in accordance with SSPC-SP 10 and obtain a 1-11/2 mil (25-40µ) blast profile.

MIXING : Power mix to a uniform consistency.

THINNING : May be thinned up to 16 oz/gal (13%) with Thinner 10.

Use of thinner other than those supplied or approved by Carboline may adversely affect product performance and will void product warranty, whether expressed or implied.

APPLICATION TEMPERATURES :

	<u>Material</u>	<u>Surfaces</u>
Normal	60-90°F(16-32°C)	60-90°F(16-32°C)
Minimum	40°F(4°C)	40°F(4°C)
Maximum	100°F(38°C)	130°F(54°C)
	<u>Ambient</u>	<u>Humidity</u>
Normal	60-90°F(16-32°C)	10-85%
Minimum	40°F(4°C)	0%
Maximum	130°F(54°C)	90%

Do not apply when the surface temperature is less than 5°F (3°C) above the dew point.

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

SPRAY : The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco.

CONVENTIONAL : Pressure pot equipped with dual regulators, 3/8" I.D. minimum material hose, a 0.046" I.D. fluid tip and appropriate air cap.

Airless :

Pump Ratio	: 30 : 1 (min.)
GPM Output	: 3.0 (min.)
Material Hose	: 3/8" I.D.(min.)
Tip Size	: 0.013~0.015"
Output PSI	: 2200~2400
Filter Size	: 60 mesh

* Teflon packings are recommended and are available from the pump manufacturer.

BRUSH : For small touchup areas only. Use a natural bristle brush, applying with full strokes. Avoid rebrushing.

ROLLER : Use a short nap mohair roller with phenolic core. Avoid rerolling.

Brush and Roller application may result in a streaky appearance due to orientation of the aluminum pigment. For best aesthetic appearance, spray application is required.

DRYING TIMES : These times are based on a 11/2 mil (40µ) dry film thickness. Excessive film thickness, insufficient ventilation or cooler temperatures will require longer cure times and could result in solvent entrapment and premature failure.

Surface Temperature

40°F(4°C)
50°F(10°C)
60°F(16°C)
75°F(24°C)
90°F(32°C)

Between Coats

16 Hours
8 Hours
4 Hours
2 Hour
1 Hour

Note : Will air dry to touch, but will remain soft for handling purposes.

FINAL CURE : To obtain optimum properties, must be cured to temperatures of 350~450°F(177~232°C). After a 2 hour flash off at 75°F(24°C), allow initial increase in temperature to proceed slowly up to 350°F(177°C) over a 6 hour time period. Hold at 350~450°F(177~232°C) for 2 hours, the coating is then cured and may be put into service

CLEAN UP : Use Thinner 2 or Toluol.

CAUTION : READ AND FOLLOW ALL CAUTION STATEMENTS ON THIS PRODUCT DATA SHEET AND ON THE MATERIAL SAFETY DATA SHEET FOR THIS PRODUCT.

CAUTION: CONTAINS FLAMMABLE SOLVENTS. KEEP AWAY FROM SPARKS AND OPEN FLAMES. IN CONFINED AREAS WORKMEN MUST WEAR FRESH AIRLINE RESPIRATORS. HYPERSENSITIVE PERSONS SHOULD WEAR GLOVES OR USE PROTECTIVE CREAM. ALL ELECTRIC EQUIPMENT AND INSTALLATIONS SHOULD BE MADE AND GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. IN AREAS WHERE EXPLOSION HAZARDS EXIST. WORKMEN SHOULD BE REQUIRED TO USE NONFERROUS TOOLS AND TO WEAR CONDUCTIVE AND NONSPARKING SHOES.

