Carbothane® 134 MC Aluminum

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	Aliphatic Acrylic Polyurethane
Description	High gloss finish with exceptional weathering performance characteristics. Used extensively in virtually all industrial markets, provides a smooth, durable finish that has superior resistance to corrosion and chemical exposure.
Features	• High solids, low VOC content • Excellent weatherability • Excellent flow characteristics allow for application by spray or roller • Available in metallic-pigmented colors • Superior impact and abrasion resistance • Indefinite recoatability • VOC compliant <100 g/l VOC
Color	M72N (Metallic Grey) Other limited metallic colors available by special order The alignment of aluminum flakes in aluminum-filled finishes is very dependent on application conditions and techniques. Care must be taken to keep conditions as constant as possible to reduce variations in final appearance. It is also advisable to work from a single batch of material since variations can occur from batch to batch.
Finish	Gloss
Primer	Refer to Substrates & Surface Preparation.
Dry Film Thickness	2 - 2.5 mils (51 - 64 microns) per coat
Solids Content	By Volume 70% +/- 2%
Theoretical Coverage Rate	1123 ft²/gal at 1.0 mils (27.6 m²/l at 25 microns) 561 ft²/gal at 2.0 mils (13.8 m²/l at 50 microns) 449 ft²/gal at 2.5 mils (11.0 m²/l at 62 microns) Allow for loss in mixing and application.
VOC Value(s)	Per EPA Method 24: Less than 100 g/l These are nominal values and may vary slightly with color. Product contains VOC-exempt t-butyl acetate. Check local regulations regarding product usage.
Dry Temp. Resistance	Continuous: 300°F (149°C) Some discoloration and loss of gloss may be experienced at elevated temperatures.
Topcoats	Carbothane 134 Clear is recommended for all metallic finishes

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. For all surfaces prime with specific Carboline primers as recommended by your Carboline sales representative. Refer to the specific primer's Product Data Sheet for detailed requirements of the specified primer.

SUBSTRATES & SURFACE PREPARATION

Previously Painted Surfaces | Lightly sand to roughen and de-gloss the surface. Existing paint must attain a minimum 3A rating in accordance with ASTM D3359 “XScribe” adhesion test.

PERFORMANCE DATA

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

Test Method	System	Results
ASTM B117 Salt Fog	Blasted Steel 1 ct. Org. Zinc 1 ct. Epoxy 1 ct. 134 HG	No rusting, blistering, loss of bond or any measurable creepage from the scribe after 3000 hours
ASTM D2794 Impact Resistance	Blasted Steel 1 ct. 134 HG	155 inch-pounds; No visable cracking Gardner Impact Tester
ASTM D3359 Adhesion	Blasted Steel 1 ct. Epoxy 1 ct 134 HG	5A
ASTM D3363 Hardness	Blasted Steel 1 ct. Epoxy 1 ct. 134 HG	H
ASTM D4060 Abrasion	Blasted Steel 1 ct 134 HG	70 mg. loss after 1000 cycles, CS17 wheel, 1000 gm. load
ASTM D4541 Adhesion	Blasted Steel 1 ct Epoxy 1 ct 134 HG	2562 psi Pneumatic
ASTM D870 Immersion Resistance	Blasted Steel 1 ct Org. Zinc 1 ct Epoxy 1 ct. 134 HG	No rusting in the scribe; no blistering, no softening or discolorationafter either 30 days of fresh
ASTM G26 Weatherometer	Blasted Steel 1 ct Epoxy 1 ct 134 HG	No blistering, rusting or cracking 85 %; color change of 1 Mc Adam unit after 2000 hours.
ASTM G53 ASTM D4587 Accelerated Weathering	Blasted Steel 1 ct Org. Zinc 1 ct. Epoxy 1 ct 134 HG	No rusting, blistering or loss of adhesion; less than 5% gloss loss after 3000 hours

Testing shown based on Carbothane 134 HG.

MIXING & THINNING

Mixing | Power mix Part A separately, then combine and power mix. DO NOT MIX PARTIAL KITS.

Thinning | Use of thinners other than those supplied or recommended by Carboline may adversely affect product performance and void product warranty, whether expressed or implied.

Ratio | 4:1 Ratio (A to B)

Pot Life | 4 Hours at 75°F (24°C) and less at higher temperatures. Pot life ends when coating becomes too viscous to use. MOISTURE CONTAMINATION WILL SHORTEN POT LIFE AND CAUSE GELLATION.

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)
This is a high solids coating and may require adjustments in spray techniques. Wet film thickness is easily and quickly achieved. Spray equipment from manufacturers such as Binks, DeVilbiss and Graco has been found suitable.

Conventional Spray
Pressure pot equipped with dual regulators, 3/8" I.D. minimum material hose, .070" I.D. fluid tip and appropriate air cap.

Airless Spray
Pump Ratio: 30:1 (min.)*
GPM Output: 3.0 (min.)
Material Hose: 3/8" I.D. (min.)
Tip Size: .015-.017"
Output PSI: 2100-2400
Filter Size: 60 mesh
*Teflon packings are recommended and available from the pump manufacturer.

Brush & Roller (General)
Not recommended due to misalignment of aluminum flakes typically achieved if brushed or rolled. Avoid re-brushing or re-rolling. For best results, tie-in within 10 minutes at 75°F (24°C).

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	50°F (10°C)	35°F (2°C)	35°F (2°C)	0%
Maximum	100°F (38°C)	120°F (49°C)	95°F (35°C)	80%

Industry standards are for substrate temperatures to be above 5°F (3°C) the dew point.
Caution: This Product is moisture sensitive in the liquid stage and until fully cured. Protect from high humidity, dew and direct moisture contact until fully cured. Application and/or curing in humidities above maximum, or exposure to moisture from rain or dew may result in a loss of gloss and/or micro bubbling of the product.

CURING SCHEDULE

Surface Temp.	Dry to Handle	Dry to Recoat	Final Cure General
35°F (2°C)	36 Hours	36 Hours	14 Days
50°F (10°C)	16 Hours	16 Hours	10 Days
75°F (24°C)	8 Hours	8 Hours	7 Days
90°F (32°C)	4 Hours	4 Hours	5 Days

These times are based on a 2.0 mil (50 micron) 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.
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CLEANUP & SAFETY

Cleanup
Use Thinner 2 or Acetone. 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. Wear protective clothing, gloves and use protective cream on face, hands and all exposed areas.

CLEANUP & SAFETY

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 insure all personnel are below guidelines. If not sure, use MSHA / NIOSH approved respirator.
Caution	This product contains flammable solvents. Keep away from sparks and open flames. All electrical equipment and installations should be made and grounded in accordance with the National Electric Code. In areas where explosion hazards exist, workmen should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

PACKAGING, HANDLING & STORAGE

Shelf Life	Part A: Min. 36 months at 75 °F (24 °C) Part B: Min. 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°-110°F (4°-43°C) 0-80% Relative Humidity
Storage	Store Indoors.
Shipping Weight (Approximate)	1 Gallon Kit - 13 lbs (6kg) 5 Gallon Kit - 65 lbs. (27 kg)
Flash Point (Setaflash)	Part A: 68° F (20° C) Urethane Converter 811 Part B: 127°F (53 °C)

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.