Carbothane® 134 HS

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	Acrylic aliphatic polyurethane
Description	An attractive, high gloss, high solids topcoat which is easily applied by airless or conventional spray to yield a smooth, easily cleanable surface. Recommended use as a finish coat for the exteriors of tanks, equipment, piping, structural steel, and concrete surfaces where chemical resistance, toughness, and weatherability are required. An excellent coating for use in chemical processing, pulp and paper, petro-chemical, bridge, offshore, railcars, heavy marine, institutional and waste treatment facilities where a highly resistant and attractive coating is desired. Not recommended for immersion service.
Features	• Excellent weatherability • Excellent flexibility • Excellent abrasion resistance • Available in Carboline's Rapid Tint System • Meets most VOC requirements • Indefinite recoatability
Color	Refer to Carboline Color Guide. Certain colors, particularly in non-leaded safety oranges, reds and yellows may require multiple coats for adequate hiding. Check color suitability before use.
Finish	High Gloss
Primer	Refer to Substrates & Surface Preparation.
Dry Film Thickness	2 mils (51 microns) per coat Additional thickness may be required over rough surfaces for appearance. Dry film thickness in excess of 4 mils per coat is not recommended
Solids Content	By Volume 66% +/- 2%
Theoretical Coverage Rate	1059 ft²/gal at 1.0 mils (26.0 m²/l at 25 microns) 529 ft²/gal at 2.0 mils (13.0 m²/l at 50 microns) Allow for loss in mixing and application.
VOC Values	Thinner 214 13 oz/gal 2.8 lbs./gal (336 g/l) Thinner 215 10 oz/gal 2.8 lbs./gal (336 g/l) Thinner 25 12 oz/gal 2.8 lbs./gal (336 g/l) As Supplied 2.4 lbs./gal (288 g/l) These are nominal values and may vary slightly with color
Dry Temp. Resistance	Continuous: 200°F (93°C) Non-Continuous: 250°F (121°C) Non-immersion
Topcoats	Carbothane Clear Coat when required

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.
Previously Painted Surfaces	Lightly sand or abrade to roughen and degloss the surface. Existing paint must attain a minimum 3A rating in accordance with ASTM D3359 "X-Scribe" adhesion test.

PERFORMANCE DATA

Test Method	System	Results
ASTM E84 Flame and Smoke	1 ct. Zinc 1 ct Epoxy 1 ct 134 HS	5 Flame O Smoke Class A

Test reports and additional data available upon written request.

MIXING & THINNING

Mixing	Power mix Part A, then combine with Part B and power mix in the following proportions. DO NOT MIX PARTIAL KITS.
Thinning	May be thinned up to 13 oz/gal with Thinner 214 or Thinner 25 for normal spray application. In hot or windy conditions, Thinner 214 is preferred. Use Thinner 215 up to 10 oz/gal for brush and roller applications. Use of thinners other than those supplied or recommended by Carboline may adversely affect product performance and void product warranty, whether expressed or implied. Carboline Thinner #236E may also be used to thin this product to minimize HAP and VOC emissions. Consult Carboline Technical Service for guidance.
Ratio	**0.84 Gal. Kit** Part A (134 HS): 3 quarts (in 1 gal. can) Urethane Converter 900: 12 fl. oz. **4.0 Gal. Kit** Part A (134 HS): 3.55 gallons (in 5 gal. can) Urethane Converter 900: 0.45 gallon
Pot Life	4 Hours at 75°F (24°C) and less at higher temperatures. Pot life ends when coating becomes too viscous to use. THIS PRODUCT IS MOISTURE SENSITIVE. AVOID MOISTURE CONTAMINATION.

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 slight adjustments in spray techniques. Wet film thickness is easily and quickly achieved. The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco.
Conventional Spray	Pressure pot equipped with dual regulators, 3/8" I.D. minimum material hose, .070" I.D. fluid tip and appropriate air cap.

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Airless Spray	*Pump Ratio: 30:1 (min.) GPM Output: 3.0 (min.) Material Hose: 3/8" I.D. (min.) Tip Size: .013-.017" Output PSI: 2100-2400 Filter Size: 60 mesh *Teflon packings are recommended and available from the pump manufacturer.
Brush & Roller (General)	Brushing recommended only for touch-up of small areas. Use natural bristle brush applying with full strokes. For roller application, use a short nap mohair roller with phenolic core. Avoid re-brushing and/or re-rolling. Two coats may be required to obtain desired appearance, hiding and recommended dry film thickness.

APPLICATION CONDITIONS

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

Industry standards are for substrate temperatures to be above the dew point.
Caution: This product is moisture sensitive: application and/or curing in humidities above maximum, or exposure to moisture from rain or dew point may result in loss of gloss and/or microbubbling of the product. Special thinning and application techniques may be required above or below normal conditions.

CURING SCHEDULE

Surface Temp.	Dry to Handle	Final Cure General
35°F (2°C)	24 Hours	14 Days
50°F (10°C)	16 Hours	10 Days
75°F (24°C)	8 Hours	7 Days
90°F (32°C)	4 Hours	5 Days
110°F (43°C)	1 Hour	2 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.

CLEANUP & SAFETY

Cleanup	Use Thinner 2
Safety	Read and follow all caution statements on this product data sheet and on the MSDS for this product.
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 or if not able to monitor levels, use MSHA / NIOSH approved respirator.

CLEANUP & SAFETY

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. 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)	0.84 Gallon Kit - 13 lbs. (5.9 kg) 4 Gallon Kit - 48 lbs. (21.8 kg) **1s** Thinner 25: 8 lbs. (4 kg) Thinner 214: 8 lbs. (4 kg) Thinner 215: 8 lbs. (4 kg) **5s** Thinner 25: 39 lbs. (18 kg) Thinner 214: 39 lbs. (18 kg) Thinner 215: 39 lbs. (18 kg)
Flash Point (Setaflash)	Carbothane 134 HS Part A: 43°F (6°C) Urethane Converter 900: 106°F (41°C) Thinner 25: 87°F (30°C) Thinner 214: 110°F (43°C) Thinner 215: 128°F (54°C)

WARRANTY

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