

QUANTUM⁹⁹ POLYURETHANE TOPCOAT



INTRODUCTION

Quantum⁹⁹ Polyurethane Topcoat is a two component acrylic-polyester hybrid coating engineered for beauty and protection in harsh marine environments. This high solids topcoat provides superior protection and beauty to watercraft, aircraft, and other specialty equipment requiring excellent chemical and weather resistance, excellent reparability, superior durability, superior stain resistance, and superior DOI. Available in standard marine, metallic, and custom colors.

USES

Quantum⁹⁹ Polyurethane Topcoat is used as an ultra hi-gloss finish coat for spray and brush/roll applications (also available in 2K aerosol cans). Though specifically designed to withstand harsh marine environments and aerospace specifications, Quantum⁹⁹ is suitable for almost any application requiring beauty, UV protection, and abrasion/chemical resistance. For exterior and interior use. Do not use below the waterline.



PHYSICAL PROPERTIES

Appearance (Gloss):	ultra hi-gloss, various colors
Gloss:	>92 @ 60°
DOI:	>84 @ 20°
Semi-Gloss:	40-70 @ 60°
Satin:	20-40 @ 60°
Flat:	0-20 @ 60°
Viscosity (admixed):	16 - 18 Zahn #2
Volume solids (admixed):	52+/-2%
Pot life:	4 hours @ 72°F
Coverage @ 1 mil (no loss):	800-825 ft ² /gal
Coverage @ 3 mils (no loss):	250-275 ft ² /gal
VOC (admixed):	<420 g/l (3.5 lbs/gal) - all colors
Pencil Hardness:	2H
Impact Resistance:	Direct/Reverse > 80 in/lb
Shelf Life:	2 years from DOM



MIXING



COMPONENTS

99-BA1-####	Quantum ⁹⁹ Polyurethane Ultra Hi-Gloss Base (various colors)
99-BA1-CLEAR	Quantum ⁹⁹ Ultra Hi-Gloss Clear Base
99-F/S/SG-####	Quantum ⁹⁹ Polyurethane Flat/Satin/Semi-Gloss Base (various colors)
99-A-100	Quantum ⁹⁹ Spray Activator
SR-99	Quantum ⁹⁹ Medium Spray Reducer
SR-001	Quantum Cool Weather/Fast Reducer
SR-005	Quantum Warm Weather/Slow Reducer
99-ABR-2001	Quantum ⁹⁹ Brushing Activator
SR-95	Quantum Brushing Reducer



ADDITIVES

99-X-105	Quantum Polyurethane Accelerator Solution
99-X-110	Quantum Fisheye Eliminator
99-X-113	Quantum Flattening Paste

MIX RATIO - HI-GLOSS SPRAY



SPRAY	PARTS	EXAMPLE
99-BA1-####	1	8 oz.
99-A-100	1	8 oz.
SR-###	0-0.15	0-2.5 oz.

MIX RATIO - HI-GLOSS BRUSH/ROLL



BRUSH/ROLL	PARTS	EXAMPLE
99-BA1-####	2	8 oz.
99-ABR-2001	1	4 oz.
SR-95	1	4 oz.

MIX RATIO - FLAT/SATIN/SEMI-GLOSS SPRAY



SPRAY	PARTS	EXAMPLE
99-SG/F-####	2	8 oz.
99-A-100	1	4 oz.
SR-###	0-0.15	0-2.5 oz.

MIX RATIO - FLAT/SATIN/SEMI-GLOSS BRUSH/ROLL



BRUSH/ROLL	PARTS	EXAMPLE
99-SG/F-####	4	16 oz.
99-ABR-2001	1	4 oz.
SR-95	1	4 oz.



MIXING

1. Shake or stir 99-XX-XXXX Base to ensure all solids are properly mixed.
2. Using the chart above, mix base and activator and agitate thoroughly.
3. Reduce with up to 10% SR-XX and mix thoroughly
4. Let induct for 5 mins prior to application

APPLICATION



SURFACE PREPARATION

Properly abraded, etched, and cleaned metal surfaces should be primed with corrosion inhibiting primers, such as Quantum⁴⁵ Chromated Epoxy Primer. The Quantum⁴⁵ Epoxy Surfacing Primer or Quantum^{HB} High Build Epoxy Primer should be applied over Quantum⁴⁵ Chromated Epoxy Primer and sanded to the desired smoothness before applying the Quantum⁹⁹ Topcoat.

Quantum⁴⁵ Primers can be applied directly to properly abraded wood, fiberglass/gelcoat, carbon fiber, and previously painted surfaces. Solvent clean with SR-002 Quantum Surface Prep Cleaner prior to application such that surfaces are free from dust, oils, corrosion or any other contaminants using lint free cloth and the wipe-on/wipe-off method. Tack rags are not necessary or recommended prior to Quantum⁹⁹ application. Refer to primer data sheets for complete application details.



SPRAY APPLICATION

EQUIPMENT¹

Gun Type	Nozzle	Air Pressure
Conventional Siphon Feed	1.2-1.4 mm	28-32 psi
Conventional Gravity Feed	1.2-1.4 mm	28-32 psi
Conventional Pressure	0.8-1.2 mm at 8-10 oz/min	28-32 psi
HVLP Gravity Feed	1.2-1.4 mm	8-10 psi at cap
HVLP Pressure Feed	0.8-1.2 mm at 8-12 oz/min	8-10 psi at cap

¹Refer to the manufacturer's directions for gun specific recommendations.

SPRAYING

Apply 2-3 medium coats allowing 45mins @72°F between coats until recommended film thickness is achieved.



BRUSH/ROLL APPLICATION

Use EMC² High Density Foam Cigar Roller or 1/8"-3/16" nap solvent resistant foam roller. In most cases, tipping is not necessary, simply roll apply in uniform coats using the roller to uniformly "stretch" the paint. Be careful not overwork the film (@ 72°F wet edge is ~90 seconds). Second and third coats can be applied once subsequent coats are dry through (~4 hours @ 72°F), though sanding between coats can provide a smoother final appearance. During application, keep in mind that Quantum is very repairable - imperfections can be polished in 48 hours @72°F (cure time can be accelerated with 99-X-105 Quantum Urethane Accelerator).

Warning: topcoats that have been allowed to cure >12 hrs @ 72F must be abraded before subsequent coats are applied. Higher temperatures and urethane accelerators will decrease recoat window.

NOTE: Application of these product systems requires recommended temperature/humidity conditions and film thickness ranges. The material, hangar, and substrate temperature should be no lower than 45°F before, during, and after application. Do not apply paint materials to surfaces less than 5°F above dew point, or to surfaces warmer than 125°F. Substrate temperature should be minimum 45°F to maximum 125°F.





DRY TIMES

	AIR DRY - SPRAY ²	AIR DRY - BRUSH/ROLL
Touch	1 hour	2 hours
Through	4 hours	4 hours
Tape	8 hours	12 hours
Polish	36 hours	48 hours
Light Service	36 hours	48 hours
Full Cure	7 days	7 days
Overcoat (Self)	30 mins min/24 hours max	4 hours min/12 hours max
Overcoat (Clear)	1 hour min/24 hours max	4 hours min/12 hours max

²Air dry and overcoat times are dependent on shop conditions. Use 99-X-105 Urethane Accelerator to accelerate dry times.

³If recoating after 12 hours, scuff sand with 320-800 grit

SANDING / COMPOUNDING / POLISHING



SANDING

- Wet sand with 1000 grit or finer or use a foam interface pad with P1000 DA or finer.
- Darker colors may require an additional 2000-3000 grit wet sand

COMPOUNDING

- Apply a ribbon of rubbing compound to the area that was sanded or contains sand scratches.
- Maintain air polisher or variable speed buffer at 1500-20000 rpm. Remove excess finishing compound with a clean soft cloth prior to applying finishing polish.
- Use a wool pad and an effective rubbing compound.



POLISHING

- Apply a ribbon of polishing material to the area to be polished.
- Maintain a variable speed buffer or an orbital polisher at 1500-2000 rpm.
- Use a wool pad and an effective polishing compound. Keep the polisher/buffer moving at all times. Overlap each pass approximately 50%. As finishing polish begins to dry, stop polishing. Wipe off excess finishing polish with a clean soft cloth.
- Hand buff with a clean soft cloth as a finishing touch.

