Metallic Base Coat / Clear Coat

Technical Data Sheet:
M series - T0125

1. Introduction

ALEXSEAL® Metallic Base Coat has been designed specifically to withstand the harsh marine environment. It is formulated with a two-component basecoat that provides superior inter-coat adhesion and reduces the possibility of mottling or unevenness in the finish. In addition a two-component aliphatic polyester polyurethane is used for the final clear finish. This gives the Alexseal Metallic System unsurpassed scratch and stain resistance while preventing discoloration of the clear coat.

2. Range of application

ALEXSEAL® Metallic Base Coat is intended to be part of a base coat/clear coat finish combined with ALEXSEAL® Premium Topcoat 501, T0125 Clear Gloss for the application of a metallic finish. It can be used internally or externally on areas of the yacht which are not subject to permanent water immersion.

3. Color

ALEXSEAL® Metallic Base Coat is available in standard factory packaged colors and, upon request, in custom colors. Refer to the color card or price list for part numbers.

4. Coverage

Volume Solids without reduction: 30 - 45% (depending on color)

Coverage for ALEXSEAL® Metallic Base Coat when applying 2 cross coats or passes in the same application period is as follows
Note: Coverage rates are figured for base and converter. Reducer is added as percent of total quantity of base & converter.

	m² / liter	**m² / gal**	**sq. ft. / gal**	**@ DFT in µm (mils)**
Theoretical	10.5	40	428	25 (1)
Practical				
Conventional Air Spray Equipment Parts and Superstructure/multiple shoots	2.45	9.29	100	25 (1)
Conventional Air Spray Equipment Flat Panel or Hull one shoot	4.41	16.72	180	25 (1)

Coverage for ALEXSEAL® T0125 Clear can be found in the ALEXSEAL® Premium Topcoat 501 Clear Technical Data Sheet.

5. Substrate pre-treatment

The substrate must be clean, dry and free from dust, grease, oil and other contaminations. To achieve optimum performance and adhesion ALEXSEAL® Finish Primer 442 must be used. Final sanding of ALEXSEAL® Finish Primer 442 should be smooth sanded with 320 - 400 grit sand paper.

6. Trade names

Base Material	M….	ALEXSEAL® Metallic Base Coat (Base Color)
Hardener	C5051	ALEXSEAL® Topcoat Converter Spray
Reducer Medium (spray)	R5050	ALEXSEAL® Topcoat Reducer Medium

7. Mixing ratio

Compressed air spraying:

5 parts by volume	M….	ALEXSEAL® Metallic Base Coat
1 part by volume	C5051	ALEXSEAL® Topcoat Converter Spray
50 % by volume		ALEXSEAL® Topcoat Reducer (see above)

Example: 5 : 1 : 3 = 50% reduction

First Clear Application:

1 part by volume	T0125	ALEXSEAL® Premium Topcoat 501 Clear
1 part by volume	C5051	ALEXSEAL® Premium Topcoat 501 Converter
15 - 30 % by volume	R….	ALEXSEAL® Topcoat Reducer

Example: 1 : 1 : $^{3}/_{10}$ = 15 % reduction up to 1 : 1 : $^{3}/_{5}$ = 30 % reduction

The amount of reducer required may vary depending on the application conditions.
Subsequent sanding with 400 - 500 grit dry sand paper or 500 - 600 grit wet sand paper is recommended.

Second Clear Application: Recommended to achieve higher DOI and gloss: Same mix as first application of clear.

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8. Application

Viscosity	Zahn #2: ≈ 22 -28 sec, DIN 4 cup 4mm: ≈ 14 - 18 sec
Nozzle Size Gravity Gun	1.2 to 1.4 mm (0.042 to 0.055)
Fluid Nozzle Size Pressure Pot	1.0 to 1.3 mm (0.040 to 0.051)
Atomizing Pressure	3.0 to 5.0 bar (42 to 70 PSI)
Pot Pressure	0.7 to 1.5 bar (10 to 20 PSI)

ALEXSEAL® Metallic Base Coat is intended to be part of a base coat / clear coat finish. This system needs to be applied in 2 steps.

Application by Spraying

Apply 2 to 3 cross coats to a wet film thickness (WFT) of 25 - 50 microns (1 - 2 mils) per cross coat. Allow 30 minutes up to 4 hours tack up between cross coats. This will achieve a dry film thickness (DFT) of 20 - 40 microns (1 - 2 mils) for a 2 cross coat application. For a 3 cross coat application, this will achieve a dry film thickness (DFT) of approximately 50 microns (2 mils). Maximum recommended film thickness during a spray application is 3 cross coats totalling 150 microns (6 mils) WFT, or 50 microns (2 mils) DFT.

Step 1: Apply ALEXSEAL® Metallic Base Coat by spray application using a cross coat application technique. A minimum of two medium wet cross coats at 50 % reduction will be required before full hide of the substrate will be achieved. Multiple coats at 50 % reduction may be required depending on the size of the surface and colors or color of the surface to be coated. A flash-off time / drying period of at least 30 minutes at 30°C (85°F), longer times for lower temperatures or higher humidity, see chart below, and up to a maximum of 4 hours between application of the individual coats.

Step 2: After the Base Coat has dried a minimum of 2 hours at 30°C (85°F), longer times for lower temperatures, see chart below, up to a maximum of 12 hours at 25°C, apply 2-3 coats of ALEXSEAL® Premium Topcoat 501 Clear in order to seal the Base Coat.

Step 3: To achieve a higher level of gloss and a more durable finish, a second application of 2 to 3 coats of ALEXSEAL® Premium Topcoat 501 Clear may be needed. Careful sanding of the first Clear Coat with 400 - 500 grit dry sand paper or 500 – 600 grit wet sand paper is possible after a period of at least 12 hours (4 days is optimal), depending on temperature and humidity, in order to avoid damaging the metallic surface. Graphics may be added between Step 2 and 3. Note: it is important not to break through clear when sanding, this can effect or change the color of the metallic.

Application information for ALEXSEAL® Premium Topcoat 501 Clear can be found in the ALEXSEAL® Premium Topcoat 501 Clear Technical Data Sheet.

9. Pot life and Drying

Optimal application environment range - min. 15°C (60°F) 40% RH, up to max. 30°C (85°F) 80% RH

Temperature for minimum drying time	15°C (60°F)	20°C (68°F)	25°C (77°F)	30°C (85°F)	Max Time
Pot Life - approx. Base Coat	12 hrs	10 hrs	8 hrs	6 hrs	N/A
Recoat after tack up with ALEXSEAL® Metallic Base Coat	45 min	30 min	30 min	30 min	4 hrs
Overcoat with Alexseal® Premium Topcoat 501 Clear	3 hrs	2.5 hrs	2 hrs	2 hrs	12 hrs
Note: The above chart reflects approximate minimum and maximum time. Surface temperature, air flow, direct or non-direct sunlight, quantity of reducer, and film thickness will effect actual times during application. During the drying phase the minimum temperature is 15°C (60°F). Ideal temperature: 25°C (77°F). The minimum application condition should be 3°C (5.4°F) above dew point.					
If the maximum recoating times are exceeded the Base Coat or Top Coat is to be sanded with 400 grit sand paper before reapplication.					
Use of an accelerator in the Base Coat System is not recommended. When used in the Clear Coat System it leads to a reduction of the recoating times (see Technical Data Sheet 501 Clear).					

10. Packaging

M….	ALEXSEAL® Metallic Base Coat	1 Gal
C5051	ALEXSEAL® Topcoat Converter Spray	1 QT & 1 Gal
R….	ALEXSEAL® Topcoat Reducers Medium	1 QT & 1 Gal

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1. Introduction

ALEXSEAL® Premium Topcoat 501 Clear is a two component, polyurethane-based coating, designed for a Base Coat / Clear Coat application over the ALEXSEAL® Metallic Base Coat. ALEXSEAL® Premium Topcoat 501 Clear has a high gloss wet look which provides superior distinction of image. This product has been specifically developed for the yacht industry.
The product's special characteristics ensure a reduction of cleaning and maintenance, while at the same time preserving the yacht's appearance and value. After curing, ALEXSEAL® Premium Topcoat 501 Clear offers excellent gloss values, even under extreme climatic conditions. Additionally the material is highly resistant to UV rays, salt water, abrasion and fuel.

2. Range of application

ALEXSEAL® Premium Topcoat 501 is used as an extreme high-gloss topcoat in spray applications. It can be used internally or externally in areas not subject to permanent water immersion.

3. Coverage

Volume Solids catalyzed without reduction: 43%

Note: Coverage rates are figured for base and converter. Reducer is added as percent of total quantity of base and converter.

	m² / liter	**m² / gal**	**sq. ft. / gal**	**@ DFT in µm (mils)**
Theoretical	6	22.7	244	75 (3)
Practical				
Conventional Air Spray Equipment	3.6	13.6	146	75 (3)
HVLP Air Spray Equipment	4.5	17	183	75 (3)

5. Surface pre-treatment

ALEXSEAL® Premium Topcoat 501 Clear Gloss has to be applied after the ALEXSEAL® Metallic Base Coat has dried a minimum of 2 hours at 30°C (85°F), longer times for lower temperatures or higher humidity, see chart below, up to a maximum of 12 hours at 25°C. Apply 2-3 coats of ALEXSEAL® Premium Topcoat 501 Clear in order to seal the Metallic Base Coat.
To achieve a higher level of gloss and a more durable finish, a second application of 2 to 3 coats of ALEXSEAL® Premium Topcoat 501 Clear Gloss may be needed. Careful sanding of the first Clear Coat with 400-500 grit dry sand paper or 500 – 600 grit wet sand paper is possible after a period of at least 12 hours (4 days is optimal) depending on the conditions, in order to avoid damaging the metallic surface. Note: it is important not to break through the Clear Gloss when sanding, this can effect or change the color of the metallic.

6. Trade names

Base Material	T0125	ALEXSEAL® Premium Topcoat 501 Clear Gloss
Converter Spray	C5051	ALEXSEAL® Topcoat Converter Spray
Reducer Superfast	R5090	ALEXSEAL® Topcoat Reducer Superfast (spray)
Reducer Fast	R5070	ALEXSEAL® Topcoat Reducer Fast (spray)
Reducer Med	R5050	ALEXSEAL® Topcoat Reducer Medium (spray)
Reducer Slow	R5030	ALEXSEAL® Topcoat Reducer Slow (spray)
Accelerator	A5035	ALEXSEAL® Topcoat 501 Accelerator

7. Mixing ratio
Spray:

1 part by volume	T0125	ALEXSEAL® Premium Topcoat 501 Clear Gloss
1 part by volume	C5051	ALEXSEAL® Topcoat Converter Spray
15 to 30 % by volume	R….	ALEXSEAL® Topcoat Reducer (choose from list above)

Example: 1 : 1 : $^{1}/_{2}$ = 25 % reduction

The amount of reducer required may vary depending on the application conditions.
Mixed material must be filtered before application.

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8. Application

Viscosity	Zahn #2: ≈ 15 - 17 sec, DIN 4 cup 4mm: ≈ 12 - 14 sec
Nozzle Size Gravity Gun	1.0 mm – 1.4 mm (0.040 to 0.055) - Conventional & HVLP
Nozzle Size Siphon Cup	1.6 mm (0.060) - Conventional & HVLP
Fluid Nozzle Size Pressure Pot	1.0 to 1.3 mm (0.040 to 0.050) - Conventional & HVLP
Atomizing Pressure	3.0 to 5.0 bar (42 to 70 PSI) - Conventional & HVLP
Pot Pressure	0.7 to 1.5 bar (10 to 20 PSI) - Conventional & HVLP

Application by Spraying: Apply 2 to 3 coats to a wet film thickness (WFT) of 50 - 75 microns (2 - 3 mils) per coat. Allow 20 - 60 minutes tack up between coats. This will achieve a dry film thickness (DFT) of 30 - 50 microns (1.5 - 2 mils) for a 2 coat application. For a 3 coat application, this will achieve a dry film thickness (DFT) of 50 - 75 microns (2.5 - 3 mils). Maximum recommended film thickness during a spray application is 3 coats totalling 300 microns (12 mils) WFT, or 100 microns (4.5 mils) DFT.

Accelerator: A5035 ALEXSEAL® Topcoat 501 Accelerator is used to reduce the drying time of ALEXSEAL® Premium Topcoat 501 Clear. Per each mixed (catalyzed and reduced) 2 quarts (2 liters) of ALEXSEAL® Premium Topcoat 501 Clear, a maximum of 1 cap or 10 ml ($^1/_3$ ounce) of A5035 ALEXSEAL® Topcoat 501 Accelerator may be added. Additional quantities of accelerator reduce pot life, and are not recommended.

9. Pot life and Drying

Optimal application environment range - min. 15°C (60°F) 40% RH, up to max. 30°C (85°F) 80% RH

Temperature for minimum recoat time	15°C (60°F)	20°C (68°F)	25°C (77°F)	30°C (85°F)	Max Dry Time
Pot Life - approx.	6 hrs	6 hrs	4 hrs	4 hrs	N/A
Pot Life - with A5035 ALEXSEAL® Topcoat 501 Accelerator	3 hrs	3 hrs	2 hrs	2 hrs	4 hrs
Dust Free	90 min	60 min	45 min	30 min	N/A
Tape Dry - without accelerator	36 hrs	30 hrs	24 hrs	18 hrs	N/A
Tape Dry - with A5035 ALEXSEAL® Topcoat 501 Accelerator	30 hrs	24 hrs	18 hrs	12 hrs	N/A
Fully Cured - without accelerator	21 days	18 days	14 days	10 days	N/A
Overcoat Alexseal® Metallic Base Coat with Alexseal® Premium Topcoat 501 Clear	3 hrs	2.5 hrs	2 hrs	2 hrs	8 hrs
Recoat after tack up with additional coats of ALEXSEAL® Premium Topcoat 501 Clear	90 min	60 min	45 min	30 min	16 hrs
Note: The above chart reflects approximate minimum and maximum time. Surface temperature, air flow, direct or non-direct sunlight, quantity of reducer, and film thickness will effect actual times during application. During the drying phase the minimum temperature is 15°C (60°F). Ideal temperature: 25°C (77°F).					

10. Packaging

T0125	ALEXSEAL® Premium Topcoat 501 Clear Gloss	1 QT & 1 Gal
C5051	ALEXSEAL® Topcoat Converter Spray	1 QT & 1 Gal
R….	ALEXSEAL® Topcoat Reducers	1 QT & 1 Gal
A5035	ALEXSEAL® Topcoat 501 Accelerator	4 Ounces

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