

## Desothane® Evolution - Aviation Single-Stage Topcoat

MACH is a single-stage, 3.5 VOC polyurethane finish designed for the general aviation market. It is available in a full range of solid colors, is easy to apply and achieves a smooth, hard, durable, high-gloss finish. A selection of activators allows for application flexibility in a wide range of environmental conditions.

MACH provides resistance to the chemicals and fluids that can be present in a general aviation environment, including Skydrol®.

### MACH is compatible with the following products:

MACH Color	MACH
Aviation Hardener	CAH200
MACH Activator – Fast	CAX500
MACH Activator – Medium	CAX510
MACH Activator – Slow	CAX520
MACH Activator – Very Slow	CAX530

### MACH may be applied over:

CA7501 HS Chrome-Free Epoxy Primer  
 CA7755 HS Epoxy Primer  
 CA7650 HS Sandable Epoxy Primer/Surfacer

When sanding prior to the application of MACH, use 320 – 400 grit wet or dry.

### Application Properties:

Application Temperature	55°F to 95°F (13°C to 35°C)
Application Humidity	10% to 80% R,H,
Mix Ratio (by volume):	



MACH:	3
CAH200 Hardener:	2
CAX Series Activator:	1

Choose Activator (CAX5x0) based on shop conditions and required dry speed.

### Pot Life @ 70°F / 50% RH:

2 to 3 hours  
 High heat and humidity will shorten pot life.

### Spray Viscosity:

#2 ZAHN CUP	18 – 22 seconds
#3 ZAHN CUP	7 – 10 seconds
4DIN	12 – 15 seconds
6DIN	N/A
8DIN	N/A

### Spray Gun Set-up:

	HVLP	Conventional
Fluid Tip:	1.3 – 1.5 mm	1.3 – 1.5 mm
Air Pressure:	10 PSI at the cap	45 – 60 PSI
Pressure Pot Set-up:	1.0 – 1.4 mm with 8 – 12 fluid ounces/min.	1.0 – 1.4 mm with 8 – 12 fluid ounces/min.

### Number of Coats:

2 coats (minimum 15 minutes flash between coats)

### Dry Times @ 75°F, 50% RH:

Shop conditions and choice of MACH activator will affect dry times.

	CAX500	CAX510	CAX520	CAX530
Dust Free:	40 min.	65 min.	90 min.	160 min.
Print Free:	50 min.	90 min.	140 min.	210 min.
Tape Time:	2.5 hours	3.5 hours	5.0 hours	7.0 hours
Overspray Melt-in:	10–15 min.	20–30 min.	30–40 min.	> 45 min.
Pot Life:	2 hours	3 hours	4 hours	6 hours

Tape Time is 60 - 100 minutes when force drying at 140°

A full cure of 7 days is required in order to provide desired chemical and fluid resistance performance.

\* Force dry times are for quoted metal temperature. Additional time should be allowed in the force drying schedule to allow metal to reach recommended temperature.

### Total Film Build:

	Wet	Dry
Minimum	3.0 mils	1.5 mils
Maximum	6.0 mils	3.0 mils

### Theoretical Coverage:

690 to 740 sq. ft. depending on color.

Theoretical coverage in sq. ft./U.S. gallon ready-to-spray (RTS), giving 1 mil. (25µm) dry film thickness (assuming 100% transfer efficiency).

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## Physical Characteristics:

### VOC (Packaged):

MACH	4.20 lbs./gallon or 503 grams/liter
CAH200	2.05 lbs./gallon or 246 grams/liter
CAX500	8.03 lbs./gallon or 962 grams/liter (less exempts)
CAX510	8.10 lbs./gallon or 971 grams/liter (less exempts)
CAX520	8.12 lbs./gallon or 973 grams/liter (less exempts)
CAX530	8.14 lbs./gallon or 976 grams/liter (less exempts)

### VOC

(Ready-To-Spray): 3.48 lbs./gallon or 417 grams/liter (less exempts)

### Total Solids

By Weight (RTS): 49.0 - 55.07%

### Total Solids

By Volume (RTS): 43.0 - 46.0%

## Typical Performance Properties

Pencil Hardness	ASTM D3363	2H
Impact Resistance	ASTM D2794	> 100 in-lbs.
Conical Mandrel	ASTM D522	Pass
Gloss (60°)	ASTM D523	90 min.
Weather Resistance		
QUV (1,000-Hrs.)	ASTM G154	90% Gloss Retention, $\Delta E < 1.0$
Xenon-Arc (1,500 KJ)	ASTM G155	85% Gloss Retention, $\Delta E < 1.0$
Graffiti Resistance	ASTM D6578	Very Good
MEK Double Rubs	ASTM D5402	> 50
Chemical Resistance	ASTM D1308	
MEK		Slight Effect
Water		No Effect
Xylene		Slight Effect
NaOH, 10%		No Effect
HCl, 10%		No Effect
H2SO4, 10%		No Effect
Gasoline		No Effect
Diesel Fuel		No Effect
Skydrol		No Effect
Muriatic Acid, 10%		No Effect
Malathion, 2%		No Effect

## Typical Performance Properties (Cont.)

### Immersion Testing (MIL-PRF-85285D Performance Testing)

Water (24Hrs. @ 75 °F)	No Effect
Dry Heat (1 Hr. @ 250 °F)	$\Delta E < 1.0$
Lubricating Oil (24 Hrs. @ 250 °F)	Mild Staining
Hydraulic Fluid (24 Hrs. @ 150 °F)	No Effect

### Immersion Testing (MIL-PRF-85285D Performance Testing)

Jet Fuel A (7 Days @ 75 °F)	No Effect
Marine Diesel Fuel (24 Hrs. @ 120 °F)	Mild Staining
Skydrol (28 Days @ 75 °F)	No Effect

### Humidity Exposure (30-Days) ASTM D12247

100% Adhesion Retained (ASTM D3359)
100% Gloss Retained (ASTM D523)

**Notes:** All results are measured on an MACH White topcoat.

Performance may vary with color choice.

All results are after 7-Days of cure.

All results only valid when a properly selected and applied primer is used.

## Health and Safety:

Please refer to Material Data Safety Sheets (MSDS) for full health safety details and storage regulations.

See Material Safety Data Sheet and Labels for additional safety information and handling instructions.

## EMERGENCY MEDICAL OR SPILL CONTROL INFORMATION: (412) 434-4515; IN CANADA (514) 645-1320.

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PPG Industries  
19699 Progress Drive  
Strongsville, OH 44149  
1-800-647-6050

PPG Canada Inc.  
2301 Royal Windsor Drive  
Mississauga, Ontario L5J 1K5  
1-888-310-4762