



PROCESS STANDARD EXTERIOR PAINT SYSTEM

**CamoKote C20 Series Gloss,
CamoKote C20 Series Semi-Gloss
CamoKote C20 Series Flat
P-1019 Epoxy Primer
P-1069 High Build Primer**

Revision #: 2-08/2024

SCOPE:

This process standard will provide outline information covering the specific requirements for the mixing/handling and the application of the Primer and Polyurethane Topcoat. This exterior aircraft paint system has been designed to meet or exceed the VOC requirements of Air Pollution Regulations governing Aerospace coatings applications. These coatings also meet or surpass all performance requirements of the following specifications: DMS 2115 Ty I - DPM 6330-01 - G37.5531 - GP110AEE - GP110AEF - MEP 10-69 - MIL-PRF-85285F Ty I-IV, Cl H, Form M, Gr N - Z-12.390/MIL-PRF-85285 - Z-12.520/SP-J-513-A-0014 Ty I - Z-12.380/SP-J-513-B-0309 - SP-J-513-C-0083 Ty I, Cl A - SP-J-513-C-0083 Ty I, Cl B

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- SECTION I: PRODUCT MIXING & HANDLING**

P-1019 High Solids Epoxy Primer

Color: TRANSLUCENT YELLOW
 VOC: 300 g/l
 Mix Ratio: 1:1
 1 Part Base P-1019
 1 Part Catalyst/Activator 613

VISCOSITY: 21-28 seconds #2 Zahn EZ

SHELF LIFE: 24 months (unopened can)

* PRODUCT MUST BE ROOM TEMPERATURE PRIOR TO MIXING.

MIXING INSTRUCTIONS:

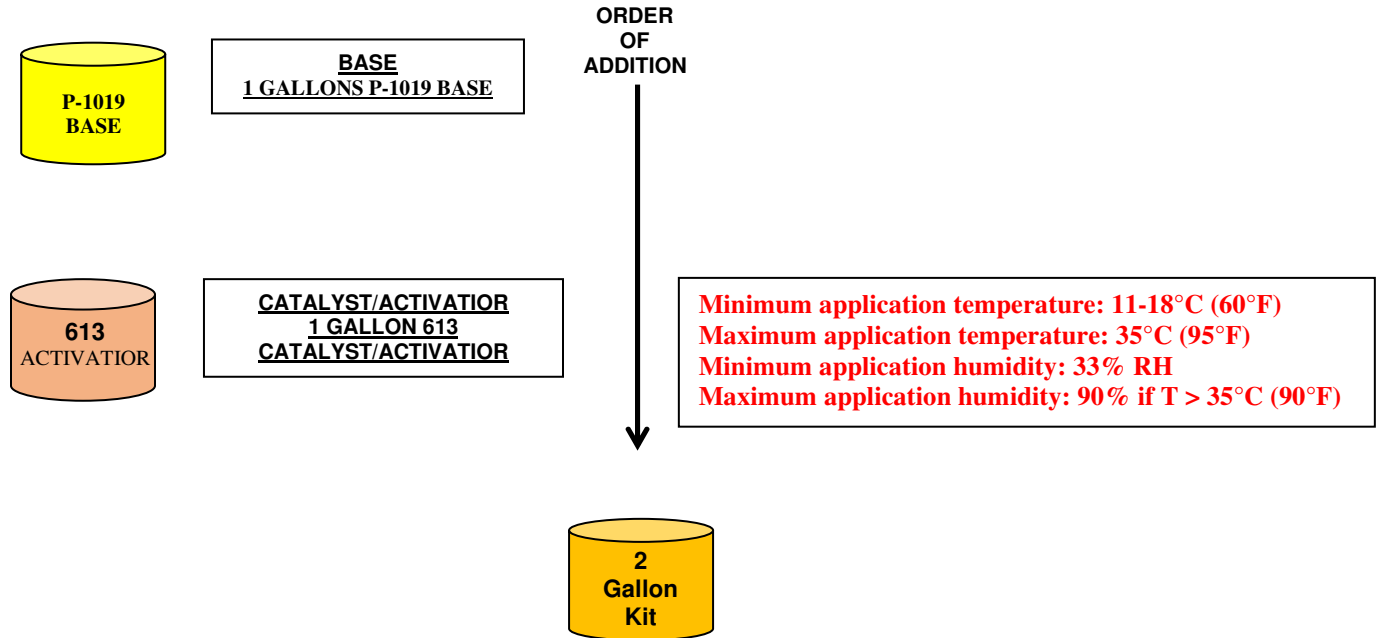
Shake Comp. A (Base) 10-15 Minutes. Be certain there is no solid material remaining on the bottom of the original container. Mix thoroughly one part P-1019 base with one part 613 hardener / catalyst. Mixed material should remain under agitation 10 minutes of induction time prior to application.

Dust Free	Tack Free	Dry to Tape	Dry to Top Coat	Dry Hard	Full Cure
1 Hour	3 Hours	4 Hours	2.5 Hour	6 Hours	6 Days

PRECAUTIONS

It is not recommended that this product be used with temperatures below 50 degrees as Epoxy Amine “bloom” may form on the primed surface and adversely affect the adhesion of the topcoat. Amine “bloom” can occur when cold surface condensation stops the epoxy exothermic reaction and forms an undetectable, invisible film, which can result in poor topcoat adhesion.

P-1019 High Solids Epoxy Primer



MIXING INFORMATION:

- PRESHAKE BASE 5 - 15 MINUTES
- ADD ONLY IN ORDER OF ADDITION
- STIR AS COMPONENTS ARE ADDED
- **INDUCTION** NONE
- TRANSLUCENT YELLOW COLOR
- **VISCOSITY** 21-28 SECONDS WITH EZ ZAHN CUP # 2
- MATERIAL SHOULD REMAIN UNDER AGITATION DURING THE ENTIRE APPLICATION
- DO NOT EXCEED POT LIFE FOR ANY MIX

Dry Times @ 21° C 70° F

Dust Free	Tack Free	Dry to Tape	Dry to Top Coat	Dry Hard	Full Cure
1 Hour	3 Hours	4 Hours	2.5 Hour	6 Hours	6 Days



Application Process Standard

• **SECTION I (CONTINUED) PRODUCT MIXING & HANDLING**

C20 Series High Solid Polyurethane Topcoat - C20 Gloss Colors

Color: XXXX
 VOC: 340-390 g/l
 Mix Ratio: 1:1 1 Part Base C20 XXX
 1 Part Catalyst/Activator 410
 Thinner / Reducer Max 12.5% by volume (See Chart Below)

VISCOSITY: 16-19 seconds #2 Zahn EZ
 Film Thickness: 2-3 Mills DFT (2Coats @1:1.5 DFT
 Wet Film Thickness 4-6 Mills total 2 coats applied.
 Pot Life 7 Hours @ 21° C 70°F
 (Higher Temperatures will shorten shelf life)

SHELF LIFE: 24 months (unopened can)

* PRODUCT MUST BE ROOM TEMPERATURE PRIOR TO MIXING.

MIXING INSTRUCTIONS:

Base	Catalyst/Activator	Thinner	Mix Ratio
C201-XXXX (Gloss)	410	See Chart Below	1:1: .25 (Max)

Shake base component for 15 minutes. Be certain there is no solid material remaining on the bottom of the original container. Add B component catalyst to component A, add recommended thinner reducer while stirring to ensure complete mixing. (See Chart Below)

No induction time is required although admixed material should be stirred/mixed under agitation 5 minute (minimum). The mixing order and induction time must be followed to obtain the best results. Use the DRY SCHEDULE Table below to select the best Reducer component for your application.

Mixed material may be reduced 5-12.5% by volume based on environmental conditions and applicators preferences. Opaque colors whites/greys require more thinner, while less opaque colors reds/yellows require less to improve flow and reduce orange peel.

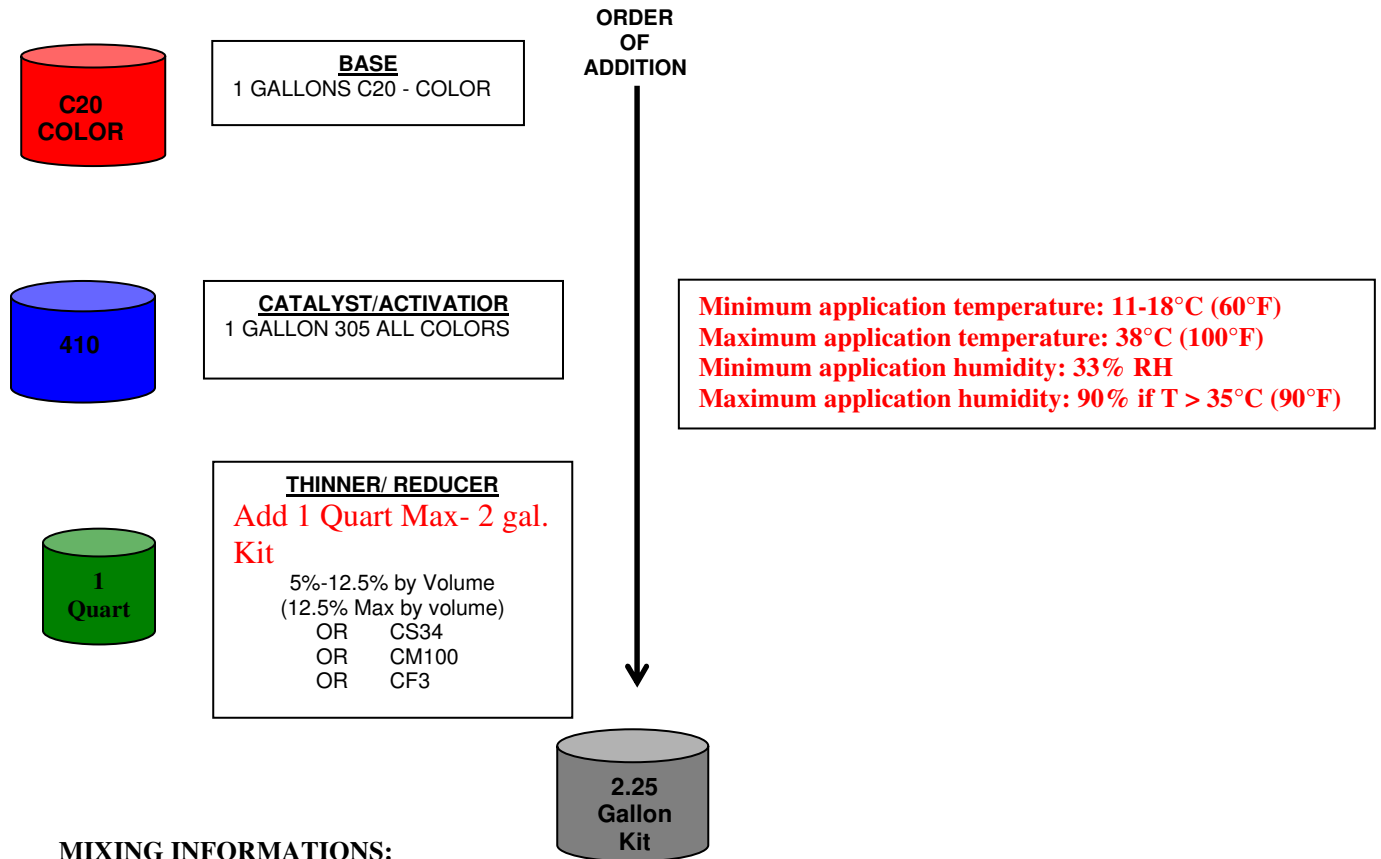
Dry Times: *Thinner Options for Gloss Colors Only**

Temperature	Thinner	PS40	Wet-Edge	Time Between Coats	Dry to Tape	Dry to Handle	Full Cure
52-65°F (11-18°C)	CF3	0.25%	50 Min	1-1.5 Hours	8-10 Hours	12 Hours	6 Days
66-75°F (19-23°C)	CM100	0.20%	40 Min	45-60 Min	7-8 Hours	9-10 Hours	6 Days
76-85°F (24-29°C)	CM100	0.10%	40 Min	45-60 Min	7-8 Hours	9-10 Hours	6 Days
86-100°F (30-38°C)	CS34	N/A	30 Min	45-60 Min	6-7 Hours	7-8 Hours	6 Days

* Do not use PS40 accelerator in temperatures over 85°F (29°C)

C20 Series High Solid Polyurethane Topcoat - C20 Gloss Colors

C20 Gloss Colors



MIXING INFORMATION:

- PRESHAKE BASE 5 - 15 MINUTES
- ADD ONLY IN ORDER OF ADDITION
- STIR AS COMPONENTS ARE ADDED
- **INDUCTION NONE**
- **VISCOSITY** 17-19 SECONDS WITH EZ ZAHN CUP # 2
- MATERIAL SHOULD REMAIN UNDER AGITATION DURING THE ENTIRE APPLICATION
- DO NOT EXCEED POT LIFE FOR ANY MIX
- ADD PAINT FOR SECOND COAT IF REQUIRED OR MIX NEW PAINT AS REQUIRED
- USE ONLY NEW PAINT FOR THE THIRD COAT IF THIRD COAT IS REQUIRED

PS40 Accelerator (Fast dry additive mix options for touch up applications)

PS40 Accelerator	Dry Between Coats	Dry to Handle	Dry Hard	Pot Life	Full Cure
0.25% By Volume	12 Minutes	2 Hours	4 Hours	4 Hours	6 Days
0.30% By Volume	10 Minutes	1.5 Hours	3 Hours	3 Hours	6 Days
0.40% By Volume	5 Minutes	45 Minutes	1 Hour	45 Minutes	6 Days



Application Process Standard

• **SECTION I (CONTINUED) PRODUCT MIXING & HANDLING**

C20 Series High Solid Polyurethane Topcoat – C202 Semi-Gloss & C203 Flat Colors

Color: XXXX
 VOC: 340-390 g/l
 Mix Ratio: 1:1
 1 Part Base C202 XXX Semi-Gloss
 1 Part Base C203 XXX Flat
 1 Part Catalyst/Activator 415 (Semi-Gloss/Flat)
 Thinner / Reducer “NO THINNER SHOULD BE ADDED”

VISCOSITY: 17-22 seconds #2 Zahn EZ
 Film Thickness: 2-3 Mills DFT (2Coats @ 1:1.5 DFT
 Wet Film Thickness 4-6 Mills total 2 coats applied.
 Pot Life 7 Hours @ 21° C 70°F
 (Higher Temperatures will shorten shelf life)

SHELF LIFE: 24 months (unopened can)

* PRODUCT MUST BE ROOM TEMPERATURE PRIOR TO MIXING.

MIXING INSTRUCTIONS:

Base	Catalyst/Activator	Thinner	Mix Ratio
C202-XXXX (Semi-Gloss)	415	None	1:1
C203-XXXX (Flat)	415	None	1:1

Shake base component for 15 minutes. Be certain there is no solid material remaining on the bottom of the original container. Add B component catalyst to component A, NO thinner should be added to Semi-Gloss or Flat Colors.

No induction time is required although admixed material should be stirred/mixed under agitation 5 minute (minimum). The mixing order and mix ratio must be followed to obtain the semi-gloss/flat finish results.

Dry Times:

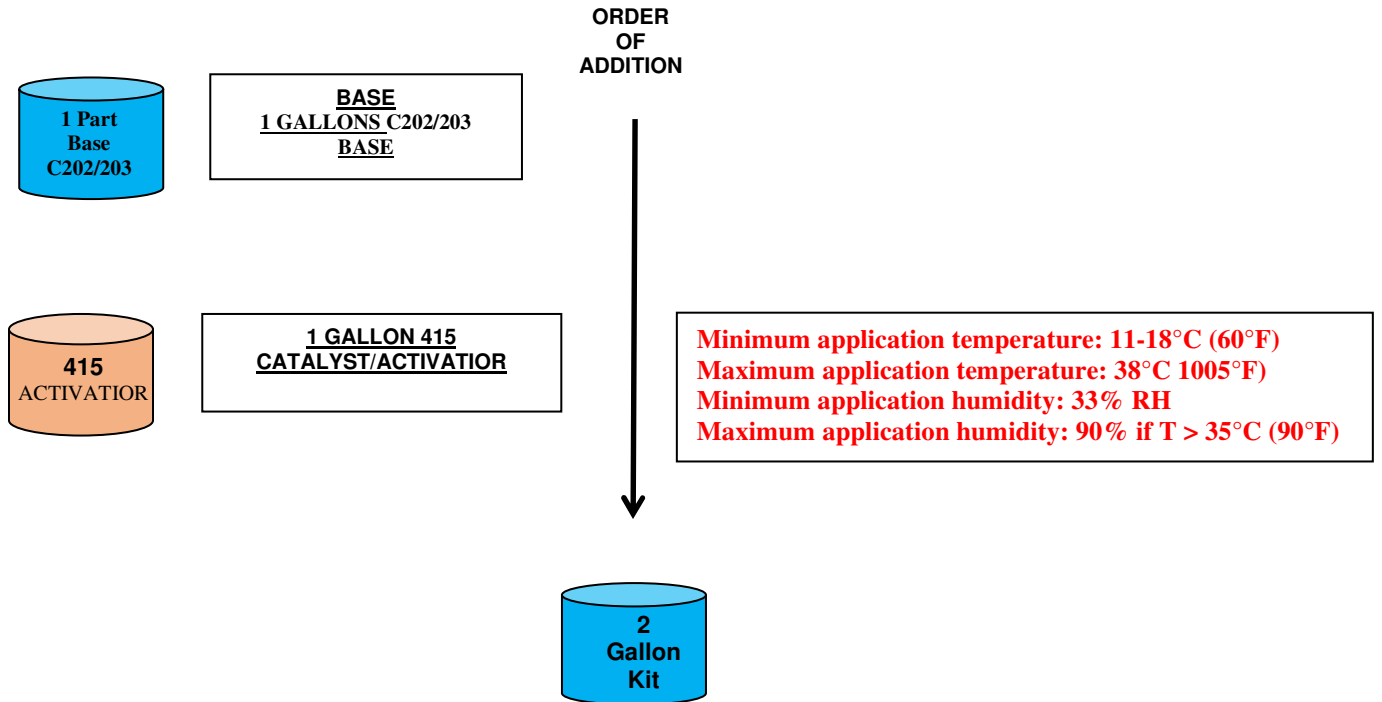
Temperature	PS40	Wet-Edge	Time Between Coats	Dry to Tape	Dry to Handle	Full Cure
52-65°F (11-18°C)	0.25%	50 Min	1-1.5 Hours	8-10 Hours	12 Hours	6 Days
66-75°F (19-23°C)	0.20%	40 Min	45-60 Min	7-8 Hours	9-10 Hours	6 Days
76-85°F (24-29°C)	0.10%	40 Min	45-60 Min	7-8 Hours	9-10 Hours	6 Days
86-100°F (30-38°C)	N/A	30 Min	45-60 Min	6-7 Hours	7-8 Hours	6 Days

* Do not use PS40 accelerator in temperatures over 85°F (29°C)



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C20 Series High Solid Polyurethane Topcoat – C202 Semi-Gloss & C203 Flat Colors



MIXING INFORMATION:

- PRESHAKE BASE 5 - 15 MINUTES
- ADD ONLY IN ORDER OF ADDITION
- NO THINNER SHOULD BE ADDED
- STIR AS COMPONENTS ARE ADDED
- **INDUCTION NONE**
- **VISCOSITY** 17-22 SECONDS WITH EZ ZAHN CUP # 2
- MATERIAL SHOULD REMAIN UNDER AGITATION DURING THE ENTIRE APPLICATION
- DO NOT EXCEED POT LIFE FOR ANY MIX

Dry Times:

Temperature	PS40	Wet-Edge	Time Between Coats	Dry to Tape	Dry to Handle	Full Cure
52-65°F (11-18°C)	0.25%	50 Min	1-1.5 Hours	8-10 Hours	12 Hours	6 Days
66-75°F (19-23°C)	0.20%	40 Min	45-60 Min	7-8 Hours	9-10 Hours	6 Days
76-85°F (24-29°C)	0.10%	40 Min	45-60 Min	7-8 Hours	9-10 Hours	6 Days
86-100°F (30-38°C)	N/A	30 Min	45-60 Min	6-7 Hours	7-8 Hours	6 Days

* Do not use PS40 accelerator in temperatures over 85°F (29°C)



SECTION I (CONTINUED) PRODUCT MIXING & HANDLING

SPECIAL PRECAUTIONS:

- 1) Hardener and Catalyst should be clear and free from gelled particles or particulate matter.
- 2) If swollen, Hardener and Catalyst cans should be discarded and not used.
- 3) Discard any component which has exceeded shelf life.
- 4) For optimum results, application environment should not exceed 90° F with 90% relative humidity or below 60°F with 85% relative humidity.
- 5) Suitable respirators and protective clothing should be worn when working with any of the products listed within this specification.
- 6) If component or mixed material comes in contact with skin or eyes, wash skin with soap and water or flush eyes with large amounts of water and seek medical attention.
- 7) See Material Safety Data Sheets for detailed safety information.
- 8) Make sure that all Federal, State and Local environmental guidelines are adhered to when following recommendations listed herein.
- 9) Paint cans should not be left open for any period of time prior to mixing.



- **SECTION II: SURFACE PREPARATION**

STRIP AND REPAINT:

After removing old paint using OEM approved stripper per manufacturer's recommendation, we recommend the following procedure:

- 1) Remove stripper residue using copious amounts of water (hot water, if available). Do not let stripper dry on aircraft surface.
- 2) Wash surface with OEM approved alkaline cleaner, diluted per manufacturer's instructions, using ScotchBrite #7448 Ultrafine or #7447 Coarse.
- 3) Seal all seams. Make fiberglass repairs and finish using High Build/Sand able Surfacer Primer.
- 4) Refer to pre-treatment manufacturer's instructions.
NOTE: For Alodine and acid brightener, apply beginning from the bottom-up rinsing quickly. For all other conversion coatings follow manufacturer's recommendations.
- 5) Thoroughly rinse and check for "Water Break Free" surface.
NOTE: A water break free surface should appear as a continuous film or sheet of water over all metal surfaces with no breaks or beads.
- 6) Wipe / air dry and blow dry seams dry prior to priming / painting.
- 7) Treated surfaces should be primed within 24 hours. Surface oxidation could interfere with primer adhesion.
- 8) When metal surface is allowed to collect dirt or other contaminants, clean the surface with solvent cleaner and tack prior to painting.
- 9) Finally, tack surfaces immediately before painting, changing tack rags frequently.

***NOTE: POOR APPLICATION OF CONVERSION COATINGS OR WAITING TOO LONG BEFORE PRIMING CAN CAUSE PRIMER TO METAL ADHESION FAILURES. NORMALLY A MAXIMUM TWENTY-FOUR HOUR LAPSED TIME IS ACCEPTABLE PRIOR TO PRIMING / PAINTING.**



- **SECTION II: SURFACE PREPARATION**

OVERCOAT OF OLD PAINT:

- 1) Check old paint for adhesion and remove that which will not support another coat of paint.
- 2) Wash surface to be sanded with approved alkaline cleaner per manufacturer's recommendation.
- 3) Sand all areas to be painted with applicable Grit paper #180 to #320.
- 4) Wash and rinse all areas with water (warm, if available) then blow dry. Wipe with Solvent / Cleaner.
- 5) Tack surfaces to be painted, changing rags frequently.
- 6) Prime entire surface to be top coated and topcoat per primer overcoat schedule. See Table in, Section III.

• **SECTION III: APPLICATION PROCESSES**

These coatings were developed to accommodate various methods of application; HVLP, Conventional, Air Electrostatic, Air Assist Airless Electrostatic. In addition, the products have been formulated to be used “as mixed” as per Section I without further reduction or additives. To optimize application and appearance, mixed material may be further reduced as per each coating series as per Section I instructions.

P-1019 High Solids Epoxy Primer

Apply a thin, smooth uniform coat to a dry film thickness of 0.5-1.2 mil. Allow primer to dry prior to top coating according to the table below @ 21° C 70° F.

Dust Free	Tack Free	Dry to Tape	Dry to Top Coat	Dry Hard	Full Cure
1 Hour	3 Hours	4 Hours	2.5 Hour	6 Hours	6 Days

Maximum overcoat time with out mechanical reactivation is 48 hours

Spray equipment should be utilized as per the below chart recommendations.

Spray Equipment

Spray Gun Type	Tip/Nozzle Size	Cap Pressure	Pot Pressure
Conventional Air	1.3 - 1.6 mm	40 to 60 psi	10 to 20 psi
HVLP	1.4 - 1.6mm	10 psi Maximum	10 to 20 psi
Electrostatic	1.2 - 1.5mm	45 to 60 psi	10 to 40 psi
Air Assist Airless Electrostatic	.28 - .33 mm	40 to 60 psi	700 to 1200 psi

PRECAUTIONS

It is not recommended that this product be used with temperatures below 52 degrees as Epoxy Amine “bloom” may form on the primed surface and adversely affect the adhesion of the topcoat. Amine “bloom” can occur when cold surface condensation stops the epoxy exothermic reaction and forms an undetectable, invisible film, which can result in poor topcoat adhesion.

Temperature and Humidity	Minimum	Maximum
Temperature Celsius	11°	35°
Temperature Fahrenheit	52°	95°
Humidity	33%	74%



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• **SECTION III: (CONTINUED) APPLICATION PROCESSES**

C20 Series High Solid Polyurethane Topcoat - C20 Gloss Colors

Only mix enough material to be applied for initial and each additional coat. Add component B to component A. Continuous agitation is recommended during application. Refer to mixing instructions in Section I for adjustments to thinner application as per temperature.

IMPORTANT NOTE: For organic yellow, orange, red, and some green, and blue colors it is necessary to apply a coat of solid white or light gray C20 Series prior to final color application.

Spray / apply 2 uniform coats to achieve a DFT of 2-3 mills using siphon, pressure pot, electrostatic, or HVLP spray equipment. Airless spray is not recommended.

Gloss Colors: 90 Minimum @ 60 degrees

Spray Equipment

Spray Gun Type	Tip/Nozzle Size	Air Pressure	Pot Pressure
Conventional Air	1.3 - 1.6 mm	40 to 60 psi	10 to 20 psi
HVLP	1.4 - 1.6mm	10 psi at cap	10 to 20 psi
Air Electrostatic	1.2 - 1.5mm	45 to 60 psi	10 to 40 psi
Air Assist Airless Electrostatic	.23 - .34 mm	40 to 60 psi	700 to 1200 psi

Do not let the applied topcoat dry to touch between coats. The coating should be tacky to touch enough with slight transfer when the next coat is applied.

Sanding of primary color to remove gloss, should be done with 240-320 grit sand paper to ensure adhesion of additional colors.

***NOTE:** The successful second or third coat application depends on the previous coat being wet enough to allow proper flow and wet edge. If previous coat has dried to touch and will not transfer, waiting an additional 2 hours at 77°F will aid in the application of next coat with minimal orange peel.

SPECIAL PRECAUTIONS:

For high humidity conditions please consult with your 3Chem representative for Reducer / Additive options.

Temperature and Humidity	Minimum	Maximum
Temperature Celsius	11°	38°
Temperature Fahrenheit	52°	100°
Humidity	33%	74%

*Max recommended relative humidity at application is 90%. *

- **SECTION III: (CONTINUED) APPLICATION PROCESSES**

C20 Series High Solid Polyurethane Topcoat – C202 Semi-Gloss & C203 Flat Colors

Only mix enough material to be applied for initial and each additional coat. Add component B to component A. Continuous agitation is recommended during application. Refer to mixing instructions in Section I.

IMPORTANT NOTE: For organic yellow, orange, red, and some green, and blue colors it is necessary to apply a coat of solid white or light gray C20 Series prior to final color application.

Apply one even wet coat in a cross-coat application to achieve required coverage in one single coat to achieve proper gloss requirement.

Seni Gloss Colors: 17-30 @ 60 degrees

Flat / Matt Colors: Less than 5 @ 60 degrees.

Spray Equipment

Spray Gun Type	Tip/Nozzle Size	Cap Pressure	Pot Pressure
Conventional Air	1.3 - 1.6 mm	40 to 60 psi	10 to 20 psi
HVLP	1.4 - 1.6mm	10 psi Maximum	10 to 20 psi
Electrostatic	1.2 - 1.5mm	45 to 60 psi	10 to 40 psi

Sanding of primary color to remove gloss, should be done with 240-320 grit sand paper to ensure adhesion of additional colors.

SPECIAL PRECAUTIONS:

For high humidity conditions please consult with your 3Chem representative for Reducer / Additive options.

Temperature and Humidity	Minimum	Maximum
Temperature Celsius	11°	38°
Temperature Fahrenheit	52°	100°
Humidity	33%	74%

*Max recommended relative humidity at application is 90%. *

- **SECTION III: (CONTINUED) APPLICATION PROCESSES**

Dry To Fly (DTF)

Dry To Fly (DTF), for major colors and high erosion areas, on a completed aircraft is recommended to be minimum of 36 hours after final application of topcoat, when applied within the optimum temperature range. (See temperature/humidity charts in Section III of each series). Colder application environments may make it necessary to adjust for longer times.

The DTF time should be based on completion time of each major color application.

Dry To Fly:

Temperature	Time recommended before flying
60-65°F	72 hours
77°F	48 hours
95°F+	36 hours

**TOPCOAT: PS 40 ACCELERATOR (Fast Dry additive options for repairs and touch-up)
HIGH SOLIDS POLYURETHANE TOPCOAT**

The PS 40 Accelerator may be used in each of the C201, C202, and C203 Series. Weather conditions such as high temperature and humidity conditions can cause blushing and micro blistering due to force drying in higher temperature conditions.

The chart below will address the drying times of the PS 40 with each Series.

PS 40 should not be used for major color application with temperatures above 29° C 85° F.

See the dry time charts for each series in section I for detailed drying times of each series.

PLEASE CONTACT YOUR 3CHEM REPRESENTATIVE FOR ANY QUESTIONS OR CONCERNS.

PS 40 ACCELERATOR (Fast Dry additive options for repairs and touch-up)

PS40 Accelerator	Dry Between Coats	Dry to Handle	Dry Hard	Pot Life	Full Cure
0.25% By Volume	12 Minutes	2 Hours	4 Hours	4 Hours	6 Days
0.30% By Volume	10 Minutes	1.5 Hours	3 Hours	3 Hours	6 Days
0.40% By Volume	5 Minutes	45 Minutes	1 Hour	45 Minutes	6 Days

***Note: Overuse of PS40 additive may affect product gloss and finish**



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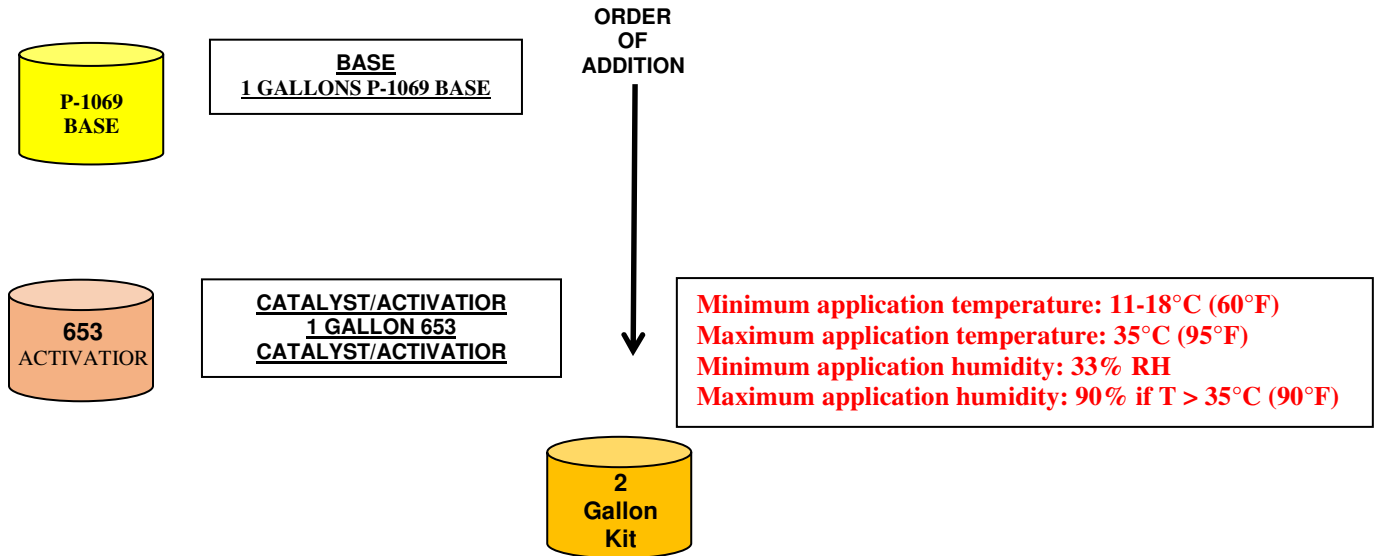
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SECTION IV: ADDITIONAL PRODUCTS / PROCESS

P-1069 High Build Primer

Color:	XXXX
VOC:	350 g/l
Mix Ratio:	1:1 1 Part Base P-1069 1 Part Catalyst/Activator 653
Induction Time:	10 Minutes
VISCOSITY:	19-25 seconds #2 Zahn cup
Film Thickness:	.5-1.0 Mills DFT Wet Film Thickness .75-1.5 Mills
Pot Life	16 Hours @ 21° C 70°F (Higher Temperatures will shorten shelf life)
SHELF LIFE:	24 months (unopened can)

* PRODUCT MUST BE ROOM TEMPERATURE PRIOR TO MIXING.



MIXING INFORMATION:

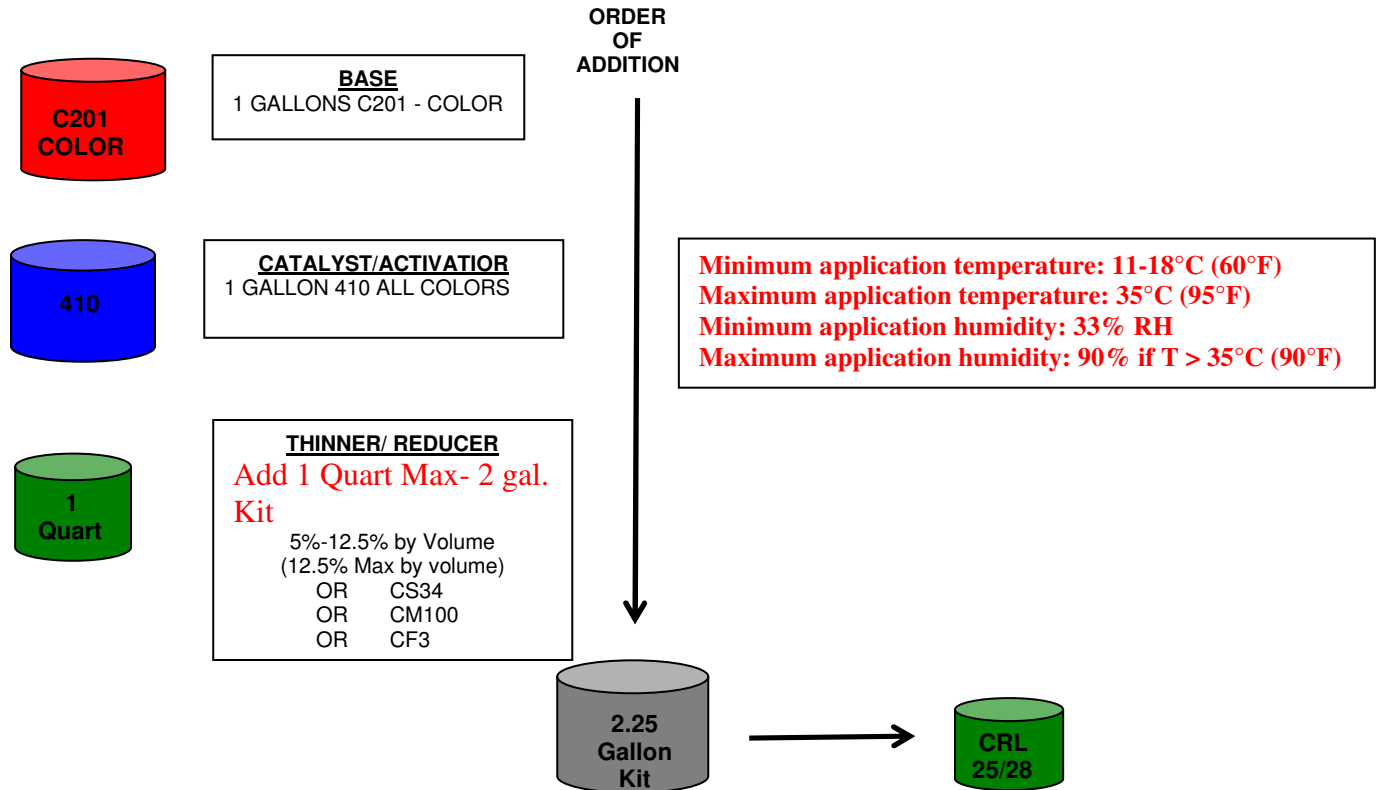
- PRESHAKE BASE 5 - 15 MINUTES
- ADD ONLY IN ORDER OF ADDITION
- STIR AS COMPONENTS ARE ADDED
- **INDUCTION 10 MINUTES**
- **VISCOSITY** 19-25 seconds #2 Zahn cup
- MATERIAL SHOULD REMAIN UNDER AGITATION DURING THE ENTIRE APPLICATION
- DO NOT EXCEED POT LIFE FOR ANY MIX



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• **SECTION IV: ADDITIONAL PRODUCTS / PROCESS**

CRL 25 & CRL 28 Roller Additive



CRL 25:

CRL 25 is a brushing Roller additive designed for use 3 Chem C20 Series Polyurethane topcoats with **low to moderate temperature ranges**. CRL 25 should be added to the completed admix by volume as per the below temperature chart.

Temperature	Add by volume	Wet-Edge	Dry to Tape	Dry to Handle	Full Cure
52-65°F (11-18°C)	2%	60 Min	8-10 Hours	10-12 Hours	6 Days
66-85°F (19-29°C)	5%	60 Min	7-9 Hours	8-10 Hours	6 Days

CRL 28:

CRL 28 is a brushing Roller additive designed for use 3 Chem C20 Series Polyurethane topcoats with **high temperature ranges**. CRL 28 should be added to the completed admix by volume as per the below temperature chart.

Temperature	Add by volume	Wet-Edge	Dry to Tape	Dry to Handle	Full Cure
86-100°F (30-35°C)	5%	60 Min	7-9 Hours	8-10 Hours	6 Days