



PPG Aerospace
PRC-DeSoto

Desothane® HS Military Coating



Where Smart Solutions Take Flight®

Desothane® HS Topcoat - CA 8200 Series

The CA 8200 series is a part of PPG Aerospace's growing family of Desothane® HS topcoat products. These advanced technology polyurethane topcoat products have been specifically developed to meet the stringent survivability requirements of today's military applications.

The performance advantages of the CA 8200 series are the result of careful control over the product's underlying polymer and cross-linking chemistry. Manipulation of the molecular architecture within the cured coating has allowed the development of a material possessing the critical balance of flexibility, fluid resistance, and ease of application. Long-term exterior durability has been achieved by designing a polymeric backbone that eliminates UV-sensitive compounds while the use of star-shaped polymer molecules results in lowered VOC levels. Resistance to the influence of humidity during cure has also been achieved through the use of star polymers.

The CA 8200 series has been modeled after the highly successful commercial aviation topcoat: Desothane® HS topcoat CA 8000 series. This industry-standard topcoat has over eight years of proven in-flight performance. The CA 8200 series is the third generation of a high solids exterior topcoat developed by PPG Aerospace and is qualified to military and OEM specifications.

The CA 8200 series is formulated to deliver a long wet-edge time and is available in a variety of dry-to-tape times. The standard dry-to-tape time is 5 to 7 hours and is available in all gloss ranges. This can also be accelerated to 2 to 3 hours. A one-hour dry hard gloss version is available for plural component application equipment. Not only is Desothane® HS topcoat chemistry unaffected by extremes in humidity, its cure time can be further accelerated by the use of heat when painting detail parts.



Desothane® HS Topcoat

A Family of Products

Common Topcoat Characteristics
Gloss coatings have high DOI
Available in 4 cure times
Excellent flow and leveling
Exceptional UV durability in all gloss ranges
Humidity has no known effect on cure and application
Can be applied with HVLP, electrostatic, conventional, or plural spray equipment
Jet fuel and hydraulic fluid resistant
Skydrol® fluid resistant
Available in Sempen® applicators for touch-ups
Walkway coating available as additional component

Commercial and General Aviation
CA 8000 / CA 8800 Topcoat
Qualified to BMS 10-60, BMS 10-72, DMS-2143, DPM 6456, DPM 6546
Qualified to AIMS 04-04-013 and AIMS 04-04-032
Qualified to BAMS 565-09
Qualified to DHMS C4.04
Qualified to MEP 10-069
Meets performance requirements of AMS 3095
Three-component mix for flexibility and robustness of use

Military and Defense
CA 8200 Topcoat
Qualified to Mil-PRF-85285
Qualified to Boeing MMS-420 and DMS-2115 Type I
Standard product is 5-7 hours dry-to-tape
Accelerated cure versions available per Mil-PRF-85285 Section 6.12
Available in all gloss ranges
Long wet edge time
Camouflage and semi-gloss colors do not tiger stripe
Two-component mix ratio to Mil-Spec requirements

Application Guidelines - Gloss Colors

- 1) Apply a light to medium first coat with a maximum of 1.5 wet mils (37 microns) over the primer. It is important to apply a uniform first coat so it will flow out without orange peel. Any surface defects will telegraph through the surface of the second coat.
- 2) The first coat should "tack up" before applying the second coat. Tacking up means there should be a slight transfer of wet paint to the finger when lightly touched.

The correct time between coats is extremely important in obtaining a good finish. If the second coat is applied too soon, it could develop sags around the

fasteners. However, if it is applied too late (when the first coat has passed through the tacky stage and is no longer tacky), it will not flow out very well on the first coat and can cause severe orange peel.

- 3) The second coat should be applied slightly thicker than the first coat with a maximum of 2.5 wet mils (62 microns).

It is recommended to use freshly mixed paint for each coat. Try to avoid mixing old and freshly mixed paint. This can reduce the pot life of the freshly mixed paint and possibly cause surface defects such as orange peel and reduced wet edge.

Desothane® HS Military Topcoat CA 8200 Series

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F17925

Fed. Std. 595 Color

Gloss Designation:

- 0** High gloss (90+)
- 1** Camouflage (<5)
- 2** Semi-gloss (25-35)
- 7** Dead-matte (<2)

Dry-To-Tape:

- 1** 5-7 hours
- 2** 3-5 hours
- 3** 2-3 hours
- 4** 1 hour

Mix Ratios:

- gloss: **1:1**
- semi-gloss: **3:1**
- flat: **3:1**

Activators:

- gloss: **8000D**
- semi-gloss/flat: **8200B**

Cure profile for CA8200 Military and Defense Topcoat

55°F (13°C) 75°F (24°C) 95°F (35°C)

CA 82x1/Fxxxxx

	55°F (13°C)	75°F (24°C)	95°F (35°C)
Dry-to-tape	8-10 hours	5-7 hours	3-4 hours
Pot life	4 hours	4 hours	3 hours
Dry between coats	60-90 min.	45-60 min.	30-45 min.
Wet edge	Gloss-60 min. S/G-45 min. Flat-30 min.	Gloss-60 min. S/G-45 min. Flat-30 min.	Gloss-45 min. S/G-20 min. Flat-15 min.

CA 82x2/Fxxxxx

	55°F (13°C)	75°F (24°C)	95°F (35°C)
Dry-to-tape	5-7 hours	3-5 hours	2-3 hours
Pot life	3 hours	2-3 hours	1-2 hours
Dry between coats	30-40 min.	15-30 min.	10-20 min.
Wet edge	Gloss-60 min. S/G-45 min. Flat-20 min.	Gloss-45 min. S/G-30 min. Flat-15 min.	Gloss-30 min. S/G-20 min. Flat-10 min.

55°F (13°C) 75°F (24°C) 95°F (35°C)

CA 82x3/Fxxxxx

	55°F (13°C)	75°F (24°C)	95°F (35°C)
Dry-to-tape	4-5 hours	2-3 hours	1-2 hours
Pot life	3 hours	2 hours	1 hour
Dry between coats	20-30 min.	10-20 min.	10 min.
Wet edge	Gloss-25 min. S/G-20 min. Flat-15 min.	Gloss-20 min. S/G-15 min. Flat-10 min.	Gloss-15 min. S/G-10 min. Flat-10 min.

CA 82x4/Fxxxxx – Recommended for plural component spray equipment or Sempen® applicators

	55°F (13°C)	75°F (24°C)	95°F (35°C)
Dry-to-tape	90 min.	1 hour	20 min.
Pot life	45 min.	30 min.	15 min.
Dry between coats	10 min.	5-10 min.	5 min.

Note:

- Dark colors (e.g. black, dark blue) may cure slower than light colors.
- Fxxxxx is any Fed. Color Std. 595B.
- Flash-off is typically 1 hour air-dry followed by heat curing, however this is not recommended on fast versions 82X3 and 82X4.
- All Fed. Std. 595 colors available.
- Compatible with Mil-PRF-23377, Mil-PRF-85582, TTP 2760, and 1432GV primers.
- All Desothane® HS Military topcoats certified and qualified to Mil-PRF-85285 and MMS 420.

Semi-Gloss and Camouflage

- 4) If a third coat is desired, allow the second coat to “tack up”.
- 5) Apply a third, medium coat similar to the second coat.

Note:

The time between coats will be affected by temperature, air flow, and film thickness. Thinner films, higher temperatures, and higher air flow will decrease the time between coats. Thicker films, lower temperatures, and poor air flow will increase the time between coats.

The wet edge of camouflage colors is between 20 and 30 minutes for 5 to 7 hours dry-to-tape at 77°F or 25°C for Desothane® HS CA 8200 topcoat. Therefore, it is very important to maintain the wet edge during application to avoid dry spots or tiger stripes. These topcoats can be applied in either one or two coats.

- 1) In a one-coat (cross coat/box coat) application, apply a light to medium coat followed immediately by a medium coat applied over the same area, but applied in an alternating spray direction to a total wet film thickness of 3.0-4.0 mils (75-100 microns).

Application Properties

Volatile organic compound (VOC)

EPA method 24, mixed system 420 g/l max.

Mix ratio (by volume)

Gloss colors

1 part - Base (CA 8201)

1 part - Activator (CA 8000D)

Camouflage, semi-gloss, dead-matte

3 parts - Base component (CA 8211,
CA 8221 or CA 8271)

1 part - Activator (CA 8200B)

Viscosity, Ford #4 cup

Fresh mixed 30 sec. max.

Pot life*

All gloss colors 4 hours, 40 sec. max.

All other glosses 3 hours, 50 sec. max.

(*Using base component CA 82X1, "X" denotes gloss level)

Theoretical coverage

All colors and gloss ranges

825 ± 50 ft²/gal @ 1 mil dry film

(20 ± 1.2 m²/l @ 25 microns dry film)

Accelerated cure - 60 minutes flash off, then four hours at 120°F for dry hard. For full cure apply heat for 24 hours at 120°F (49°C).

Accelerated cure can be achieved by using base components as follows:

CA 82X2 3-4 hrs DTT @ 77°F (25°C), 50% RH

CA 82X3 2-3 hrs DTT @ 77°F (25°C), 50% RH

Note: "X" denotes gloss level.

Spray equipment - Compatible with all forms of spray equipment.

Shelf life - 12 months from manufacture date.

Sempen® applicator shelf life - 6 months from manufacture date.

Dry film density

Gloss colors

0.0075 ± 0.001 lbs/ft² @ 1 mil dry film

(37 ± 5 gms/m² @ 25 microns dry film)

Camouflage, semi-gloss, dead-matte

0.0084 ± 0.001 lbs/ft² @ 1 mil dry film

(41 ± 5 gms/m² @ 25 microns dry film)

Marking Colors

- 2) In a two-coat system, apply a light to medium wet first coat to a uniform continuous film thickness – approximately 1.5-2.0 wet mils (35-50 microns). Allow the first coat to flash off and tack up before starting the second coat. Apply a uniform medium wet coat with a 50 percent overlap. The second coat can be applied wetter to a total wet film thickness of 3.0-4.0 wet mils (75-100 microns).
- 1) If the topcoat is dry-to-tape but less than 24 hours old, colors can be applied without abrading the topcoat.
- 2) If the topcoat is more than 24 hours old, lightly abrade the surface to remove the gloss, wipe clean with either Desoclean® 45 cleaner or Desoclean® 110 cleaner, then wipe dry and apply the marking colors.

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