PPG Aerospace Coatings

Desothane® CA8000 SR Solar Reflective Topcoats

TECHNICAL DATA SHEET

Product Description

Desothane® CA8000 SR Solar Reflective Topcoats are polyurethane coatings used to protect the exterior of aircraft and reduce solar heating associated with dark topcoats. These high solids topcoats are designed to be applied over Desoprime™ white epoxy primer or Desothane® HS polyurethane topcoat.

- CA8000 SR dark topcoats are designed to be transparent to near IR portion of solar radiation spectrum
- Reduces solar heating of dark topcoats on composite and aluminum based substrates
- Fuselage skin temperatures can be lowered by -4°C to -7°C (20°F to 25°F)
- Temperature reduction benefits achieved without compromise of other properties
- Requires use of highly IR reflective undercoat of Desoprime™ CA7502W white primer or Desothane® HS CA8000 white topcoat
- Excellent gloss and image reflection
- Retains gloss and color in harsh exterior environments
- Excellent impact and erosion resistance
- Skydrol® resistant
- Service temperature -54°C to 177°C (-65°F to 350°F)

Components

Mix ratio (by volume) for gloss colors:

• CA8000SR/XXXX (base component)	2 parts
• CA8000B (activator component)	1 part
• CA8000C (thinner component)	1 part

Note: Desothane® HS Buffable thinners are available in 6 types based on dry time requirements: CA8000C, CA8000CR, CA8000C1, CA8000C2, CA8000C3, and CA8000C4.

Desothane® CA8000 SR Solar Reflective Topcoats

Specifications

CA8000 SR series topcoats meet requirements of:

- AMS 3095
- BAMS 565-009
- BMS 10-60 Type II Class B Grade D
- BMS 10-72 Type VIII
- BMS 10-125 Type III Grade D
- BMS 10-126 Type I Grade D
- CMFS 037
- Dassault Falcon Jet
- DHMS C4.04
- GAMPS 3209
- MEP 10-069
- MM 1276
- Raytheon
- PAI 3760
- VMS C4.04

Note: PPG Aerospace recommends you check the most recent specification QPLs for updated information.

Product Compatibility:

CA8000 SR topcoats are compatible with Desothane® HS Polyurethane Topcoats and the following primer specifications:

- 299-947-322 Type I
- AMS 3095
- BAMS 565-008 Grade A & B Type II
- BMS 10-72 Type VIII & IX Class NC
- BMS 10-79 Type II & III
- BMS 10-103 Type I Grade A
- BMS 10-118 Type I & II Grade B
- BMS 10-123 Type I Grade B
- CMS-CT-201 Class A & B Grade A & B
- CMS-CT-206 Type I Class A
- DHMS C4.01 Type 3 Grade A
- DHMS C4.18 Type III Class A Grade B
- GAMPS 3103
- GP110AEE
- HMS 16-1738
- HMS 16-2122
- MEP 10-060 Type I & II Class A & B
- MEP 10-068 Class A & B
- MEP 10-070
- MM1275 Type I & II
- MS100016E Class S
- PWA 36525 Type 1
- SMS-111204 Type 1 Class 1 Form 1
- SMS-111207 Type 7
- STMGK 189
- TCE-M-20710-14
- VMS C4.01 Type 3 Grade A
- VMS C4.18 Type 3 Class A Grade B

Desothane® CA8000 SR Solar Reflective Topcoats

Surface Preparation and Pretreatments

CA8000 SR high solids topcoats can be applied over clean, dry, intact urethane compatible epoxy primers such as CA7502W or CA7502EW, or polyurethane topcoats such as Desothane® HS topcoats. The surface may be cleaned with DeSoto® CN20, DeSoto® CN44, or Desoclean™ 110 solvent cleaner. Observe over coating window for primers or polyurethane topcoats. For further information, refer to the Technical Data Sheets for the above mentioned primers and polyurethane topcoats.

Instructions for Use

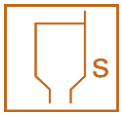
Mixing Instructions:

Prior to mixing, thoroughly shake the base component. Add one volume of CA8000B activator component to two volumes of base component and stir well. While mixing, add one volume of CA8000C series thinner component and maintain constant agitation for 10 minutes. CA8000C series component must be added to ensure adequate pot life and spray properties.

Note: It is important to condition the paint for 24 hours prior to mixing by placing all materials in the shop or hangar, with ambient temperatures between 13° and 35°C (55° to 95°F). The minimum temperature of the paint components should be 13°C (55°F) prior to mixing.

Induction Time:

Not Required

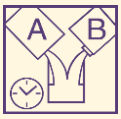


Viscosity: (23°C/73°F)

• #2 Signature Zahn cup	18 to 22 seconds
• #4 Ford cup	14 to 17 seconds
• ISO 4mm cup	19 to 30 seconds
• BSB4 cup	17 to 22 seconds
• AFNOR #4 cup	16 to 18 seconds

Note: Viscosities quoted are the typical ranges obtained when using specified mix ratio.

Desothane® CA8000 SR Solar Reflective Topcoats



Pot Life: 21 - 25°C (70 - 77°F)

Thinner	Time
CA8000C/CT	3 hours
CA8000CR/CTR	3 hours
CA8000C1/CT1	2 hours
CA8000C2/CT2	1 hour
CA8000C3/CT3	45 minutes
CA8000C4/CT4	30 minutes

Application Guidelines

Recommended Application conditions:

Temperature	15 - 30°C (59 - 86°F)
Relative Humidity	20 - 90%

Application:

To obtain solar reflective properties, CA8000 SR topcoats must be applied over Desoprime™ CA7502W white epoxy primer or a white shade of Desothane® HS CA8000 polyurethane topcoat. CA7502W primer should be applied in one box coat to obtain a dry film thickness of 22.5 to 30 microns (0.9 to 1.2 mils) Consult the Desoprime™ CA7502W Technical Data Sheet for application details. When using a primer other than Desoprime™ CA7502W, apply an undercoat of Desothane® HS CA8000/B70846 to a dry film thickness of 37.5 to 50 microns (1.5 to 2.0 mils) to achieve the required color opacity. If applying Desothane® HS CA8000 in a shade of white other than those listed above, it may be necessary to apply to a dry film thickness of 50 to 75 microns (2.0 to 3.0 mils) to achieve the required color opacity. Consult the Desothane® CA8000 HS Technical Data Sheet for application details.

Ground the aircraft and the application equipment before top coating. Stir the topcoat slowly during the application. The suggested film thickness is 37.5 to 75 microns (1.5 to 3.0 mils). This can be accomplished by two or three medium coats with a 50% overlap. Note the first coat should be allowed to tack up before applying the second coat. If the second is applied before the first coat has tacked up, sagging may occur. If the first coat is completely dry, a heavy orange peel could result.

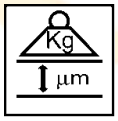
These application guidelines represent PPG's best advice in standard conditions. Some parameters will be influenced by environmental conditions, equipment settings, and other variables.

Desothane® CA8000 SR Solar Reflective Topcoats

Theoretical Coverage:

20 square meters/liter at 25 microns dry film (825 square feet/gallon at 1 mil dry film)

Recommended dry film thickness; 50 to 75 microns (2 to 3 mils)



Dry Film Density:

1.48 grams/cubic centimeter (12.32 pounds/gallon)

Dry Film Weight:

37 grams/square meter at 25 microns dry film (0.0068 pounds/square feet at 1 mil dry film)

Equipment:

CA8000 SR high solids topcoats are compatible with all current forms of spray equipment.

Equipment Type	Tip Size	Pot Pressure	Atomization Pressure at the Cap
Electrostatic Air Spray Gun	1.2 mm or 1.5 mm	10 to 20 psi (0.69 to 1.4 bar)	45 to 60 psi (3.1 to 4.1 bar)
Electrostatic Air Assisted Airless Spray Gun	#611 or #613 (Graco Nomenclature)	700 to 1200 psi (48 to 82 bar)	40 to 60 psi (2.8 to 4.1 bar)
High Volume Low Pressure Spray Gun (HVLP)	1.0 mm to 1.4 mm	10 to 20 psi (0.69 to 1.4 bar)	10 psi maximum (0.69 bar)
Conventional Air Spray Gun	1.2 mm to 1.8 mm	10 to 20 psi (0.69 to 1.4 bar)	45 to 60 psi (3.1 to 4.1 bar)

Equipment Cleaning:

Clean spray equipment as soon as possible after use. Flush spray equipment with DeSoto® CN20, DeSoto® CN44, or Desoclean™ 45 high performance solvent cleaner.

Physical Properties (product)

Color: Various

Gloss: 90+ G.U. at 60°

Desothane® CA8000 SR Solar Reflective Topcoats

Dry Times at Various Temperatures:

20°C (68°F)				
Thinners	**Dry to Tape**	**Wet Edge**	**Time Between Coats**	**Dry to Fly**
CA8000C/CT	9 - 12 hours	45 - 60 minutes	50 - 100 minutes	90 hours
CA8000C1/CT1	7 - 10 hours	25 - 40 minutes	40 - 60 minutes	65 hours
CA8000C2/CT2	4 - 5 hours	15 - 30 minutes	35 - 45 minutes	40 hours
CA8000C3/CT3	3 - 4 hours	10 - 15 minutes	30 - 40 minutes	24 hours
CA8000C4/CT4	2 - 3 hours	5 - 10 minutes	15 - 20 minutes	12 hours
CA8000C5/CT5	1 - 2 hours	3 - 5 minutes	10 - 15 minutes	8 hours
25°C (77°F)				
Thinners	**Dry to Tape**	**Wet Edge**	**Time Between Coats**	**Dry to Fly**
CA8000C/CT	8 - 12 hours	30 - 45 minutes	40 - 60 minutes	72 hours
CA8000C1/CT1	5 - 10 hours	15 - 30 minutes	30 - 45 minutes	48 hours
CA8000C2/CT2	3 - 4 hours	10 - 15 minutes	20 - 30 minutes	24 hours
CA8000C3/CT3	1 ½ - 2 ½ hours	8 - 12 minutes	15 - 20 minutes	12 hours
CA8000C4/CT4	1 - 1 ½ hours	3 - 5 minutes	10 - 15 minutes	8 hours
CA8000C5/CT5	45 - 60 minutes	2 - 4 minutes	7 - 13 minutes	6 hours

Desothane® CA8000 SR Solar Reflective Topcoats

30°C (87°F)				
Thinners	**Dry to Tape**	**Wet Edge**	**Time Between Coats**	**Dry to Fly**
CA8000C/CT	6 - 9 hours	25 - 40 minutes	40 - 55 minutes	55 hours
CA8000C1/CT1	3 - 6 hours	10 - 25 minutes	25 - 35 minutes	30 hours
CA8000C2/CT2	2 - 4 hours	8 - 15 minutes	15 - 25 minutes	18 hours
CA8000C3/CT3	1 ½ - 3 hours	6 - 12 minutes	10 - 15 minutes	10 hours
CA8000C4/CT4	45 - 60 minutes	5 - 10 minutes	8 - 12 minutes	6 hours
35°C (95°F)				
Thinners	**Dry to Tape**	**Wet Edge**	**Time Between Coats**	**Dry to Fly**
CA8000C/CT	5 - 8 hours	20 - 30 minutes	30 - 40 minutes	36 hours
CA8000C1/CT1	3 - 5 hours	10 - 20 minutes	15 - 30 minutes	24 hours
CA8000C2/CT2	2 - 3 hours	5 - 10 minutes	10 - 20 minutes	12 hours
CA8000C3/CT3	1 - 2 hours	3 - 5 minutes	5 - 10 minutes	6 hours

Accelerated cure for dry to tape with CA 8000C/CT :

Allow 30 minutes flash off at 24°C ± 3°C (75°F ± 10°F)
followed by 60 minutes at 49°C (120°F)

Note: The cure rates of CA8000 SR topcoats are not affected by humidity.

Note: The ranges listed above are dependent upon the film thickness, airflow, and spray technique. Lower film thickness, better airflow, and spraying "dry" will decrease the dry to tape, wet edge, and time between coats.

Desothane® CA8000 SR Solar Reflective Topcoats

VOC:

Mixed, ready for use VOC (EPA method 24) for all gloss, semi-gloss, and flat colors 420 grams/liter.

Base Component	348 grams/liter
Activator Component	113 grams/liter
Thinner Component	864 grams/liter

Flash point closed cup:

Base Component	29°C (84°F)
Activator Component	47°C (117°F)
Thinner Component	24°C (75°F)

Shelf Life

12 months from date of manufacture to most OEM material specifications. Consult the specification to verify shelf life requirements.

24 months from date of manufacture for PRC-DeSoto Standard.

Note: Shelf life is provided for original, unopened containers.

Note: The application and performance property values above are typical for the material, but not intended for use in specifications or for acceptance inspection criteria because of variations in testing methods, conditions and configurations.

Storage Recommendations

Inspect the condition of the container to ensure compliance. The material should be stored at temperatures between 5°C to 35°C (41°F to 95°F) to ensure shelf life.

Note: When procuring to a qualified material specification, follow those storage instructions.

Desothane® CA8000 SR Solar Reflective Topcoats

Health Precautions

This product is safe to use and apply when recommended precautions are followed. Before using this product, read and understand the Safety Data Sheet (SDS), which provides information on health, physical and environmental hazards, handling precautions and first aid recommendations. An SDS is available on request. Avoid overexposure. Obtain medical care in case of extreme overexposure.

For industrial use only. Keep away from children.

Additional information can be found at: www.ppgaerospace.com

For sales and ordering information call the local PPG office at the numbers listed below:

Asia Pacific

ASC – Australia
Tel 61 (3) 9335 1557
Fax 61 (3) 9335 3490

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PRC-DeSoto International, I
12780 San Fernando Road
Sylmar, CA 91342
www.ppgaerospace.com

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