Desothane® HS CA8200 Military and Defense Topcoats

TECHNICAL DATA SHEET

Product Description

Desothane® HS CA8200 military and defense topcoats are high solids polyurethanes used to protect the exterior of aircraft. These topcoats are designed to be applied over Desoprime™ epoxy primers and Koroflex® urethane primer.

- Good gloss and color retention
- Excellent fluid resistance
- Compatible with all current spray equipment
- Can be applied in a wide range of conditions
- Service temperature -54°C to 177°C (-65°F to 350°F)

Components

Mix ratio (by volume) for gloss colors:
- CA8201/XXXX (base component) 1 part
- CA8000D (activator component) 1 part

Mix ratio (by volume) for semi-gloss colors:
- CA8221/XXXX (base component) 3 parts
- CA8200B (activator component) 1 part

Mix ratio (by volume) for flat colors:
- CA8211/XXXX (base component) 3 parts
- CA8200B (activator component) 1 part

Mix ratio (by volume) for gunship/matte colors:
- CA8271/XXXX (base component) 3 parts
- CA8200B (activator component) 1 part

Specifications

CA8200 series topcoats are qualified to:
- AIMS 04-04-036
- DMS 2115 Type I
- EMS 93123
- FMC 9661-01
- GC130N
- GP110AEF
- MIL-PRF-85285 Type I
- MMS-420
- RMS 176 Type II

Note: PPG Aerospace recommends you check the most recent specification QPLs for updated information.
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Product Compatibility:
CA8200 topcoats are compatible with the following primers:
- DMS 1786
- MIL-P-53022
- MIL-PRF-23377
- MIL-PRF-85582
- MMS-423
- TT-P-2760

Surface Preparation and Pretreatments
CA8200 high solids topcoats can be applied over clean, dry, and intact Desoprime™ epoxy and Koroflex® primers. Desothane® HS topcoats may be applied over the primer with no abrasion if the primer was applied between 4 and 48 hours before top coating. If it is longer, then abrade the primer surface and clean the surface with Desoclean™ 110 mild solvent cleaner. For further information, refer to the Technical Data Sheet for the above mentioned primers.

Instructions for Use
Mixing Instructions:
Prior to mixing, thoroughly shake the base component for 10 minutes. Add the activator to the base component and stir well. Maintain constant agitation for 10 minutes to ensure proper mixing.

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 Zahn cup 41 seconds maximum
- #4 Ford cup 30 seconds maximum
- ISO 4 cup 68 seconds maximum
- BSB3 cup 66 seconds maximum
- BSB4 cup 36 seconds maximum
- AFNOR #4 cup 34 seconds maximum

Note: Viscosities quoted are typical values obtained when using specified mix ratio.
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Pot Life:

<table>
<thead>
<tr>
<th>Base Component</th>
<th>13 - 21°C (55 - 70°F)</th>
<th>22 - 28°C (71 - 82°F)</th>
<th>&gt;29°C (&gt;85°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA82X1</td>
<td>4 hours</td>
<td>4 hours</td>
<td>3 hours</td>
</tr>
<tr>
<td>CA82X2</td>
<td>3 hours</td>
<td>2 - 3 hours</td>
<td>1 - 2 hours</td>
</tr>
<tr>
<td>CA82X3</td>
<td>3 hours</td>
<td>2 hours</td>
<td>1 hour</td>
</tr>
<tr>
<td>CA82X4</td>
<td>1 hour</td>
<td>30 minutes</td>
<td>15 minutes</td>
</tr>
</tbody>
</table>

Application Guidelines

Recommended Application Conditions:

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

Application:

Ground the aircraft and the application equipment before top coating. Stir the topcoat slowly during the application. The suggested film thickness is 50 to 100 microns (2.0 to 4.0 mils). For gloss and semi-gloss topcoats this can be accomplished by two or three medium coats with a 50% overlap. With the flat and gunship/matte coatings it may be applied with a heavy cross coat or 2 coats. 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 dry hard, a heavy orange peel in the second coat may occur.

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

Theoretical Coverage:

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

Semi-gloss, Flat, and Matte colors:
20 square meters/liter at 25 microns dry film (820 square feet/gallon at 1 mil dry film)

Recommended dry film thickness; 50 to 100 microns (2.0 to 4.0 mils)
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**Dry Film Density:**
Gloss colors:
1.48 grams/cubic centimeter (12.33 pounds/gallon)

Semi-gloss, Flat, Gunship, and Matte Colors:
1.64 grams/cubic centimeter (13.66 pounds/gallon)

**Dry Film Weight:**
Gloss colors:
37 grams/square meter at 25 microns dry film (0.0075 pounds/square foot at 1 mil dry film)

Semi-gloss, Flat, and Matte colors:
41 grams/square meter at 25 microns dry film (0.0084 pounds/square foot at 1 mil dry film)

**Equipment:**
CA8200 high solids military topcoats are compatible with all current forms of spray equipment.

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

**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.
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Physical Properties (product)

Color: Many colors in gloss, semi-gloss, flat, or gunship/matte using Federal Standard 595 color chips (Fed Standard 34095 cannot be certified to any material specification).

Gloss: Gloss colors, 90+ G.U at 60°
Flat or matte colors, <10 G.U at 85°
Semi-gloss colors, 15 - 45 G.U at 60°

<table>
<thead>
<tr>
<th>Dry Times</th>
<th>13 - 21°C (55 - 70°F)</th>
<th>22 - 28°C (71 - 84°F)</th>
<th>&gt;29°C (&gt;85°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA82X1 Base Component</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry to Tape</td>
<td>8 - 10 hours</td>
<td>5 - 7 hours</td>
<td>3 - 4 hours</td>
</tr>
<tr>
<td>Dry Hard</td>
<td>14 hours</td>
<td>12 hours</td>
<td>10 hours</td>
</tr>
<tr>
<td>Dry to Fly</td>
<td>56 hours</td>
<td>48 hours</td>
<td>40 hours</td>
</tr>
<tr>
<td>Time Between Coats</td>
<td>60 - 90 minutes</td>
<td>45 - 60 minutes</td>
<td>30 - 45 minutes</td>
</tr>
<tr>
<td>Wet Edge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gloss</td>
<td>60 minutes</td>
<td>60 minutes</td>
<td>45 minutes</td>
</tr>
<tr>
<td>Semi-Gloss</td>
<td>45 minutes</td>
<td>45 minutes</td>
<td>20 minutes</td>
</tr>
<tr>
<td>Flat and Matt</td>
<td>30 minutes</td>
<td>30 minutes</td>
<td>15 minutes</td>
</tr>
<tr>
<td>CA82X2 Base Component</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry to Tape</td>
<td>5 - 7 hours</td>
<td>3 - 5 hours</td>
<td>2 - 3 hours</td>
</tr>
<tr>
<td>Dry Hard</td>
<td>12 hours</td>
<td>10 hours</td>
<td>8 hours</td>
</tr>
<tr>
<td>Dry to Fly</td>
<td>48 hours</td>
<td>40 hours</td>
<td>32 hours</td>
</tr>
<tr>
<td>Time Between Coats</td>
<td>30 - 40 minutes</td>
<td>15 - 30 minutes</td>
<td>10 - 20 minutes</td>
</tr>
<tr>
<td>Wet Edge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gloss</td>
<td>60 minutes</td>
<td>45 minutes</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Semi-Gloss</td>
<td>45 minutes</td>
<td>30 minutes</td>
<td>20 minutes</td>
</tr>
<tr>
<td>Flat and Matt</td>
<td>20 minutes</td>
<td>15 minutes</td>
<td>10 minutes</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>CA82X3 Base Component</th>
<th>Dry to Tape</th>
<th>4 - 5 hours</th>
<th>2 - 3 hours</th>
<th>1 - 2 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dry Hard</td>
<td>10 hours</td>
<td>8 hours</td>
<td>6 hours</td>
</tr>
<tr>
<td></td>
<td>Dry to Fly</td>
<td>40 hours</td>
<td>32 hours</td>
<td>24 hours</td>
</tr>
<tr>
<td>Time Between Coats</td>
<td>25 minutes</td>
<td>10 - 20 minutes</td>
<td>10 minutes</td>
<td></td>
</tr>
<tr>
<td>Wet Edge</td>
<td>Gloss</td>
<td>25 minutes</td>
<td>20 minutes</td>
<td>15 minutes</td>
</tr>
<tr>
<td></td>
<td>Semi-Gloss</td>
<td>50 minutes</td>
<td>15 minutes</td>
<td>10 minutes</td>
</tr>
<tr>
<td></td>
<td>Flat and Matt</td>
<td>15 minutes</td>
<td>10 minutes</td>
<td>10 minutes</td>
</tr>
</tbody>
</table>

CA82X4 Base Component

<table>
<thead>
<tr>
<th>Dry to Tape</th>
<th>1 ½ - 2 hours</th>
<th>1 hour</th>
<th>20 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry Hard</td>
<td>8 hours</td>
<td>6 hours</td>
<td>4 hours</td>
</tr>
<tr>
<td>Dry to Fly</td>
<td>32 hours</td>
<td>22 hours</td>
<td>18 hours</td>
</tr>
<tr>
<td>Time Between Coats</td>
<td>10 minutes</td>
<td>5 - 10 minutes</td>
<td>5 minutes</td>
</tr>
</tbody>
</table>

Accelerated cure for dry hard, CA82X1:

Allow 1 hour flash off at 24°C (75°F) followed by 4 hours at 49°C (120°F)

Note: The cure rates of CA8200 topcoats are not affected by humidity.

Note: The times listed above are dependent upon film thickness, airflow, and spray technique. Lower film thickness, better airflow, spraying “dry” will decrease the dry-to-tape, and time between coats.

VOC:

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

Gloss Colors

<table>
<thead>
<tr>
<th>Base Component</th>
<th>304 grams/liter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activator Component</td>
<td>485 grams/liter</td>
</tr>
</tbody>
</table>

Semi-Gloss Colors

<table>
<thead>
<tr>
<th>Base Component</th>
<th>482 grams/liter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activator Component</td>
<td>206 grams/liter</td>
</tr>
</tbody>
</table>
## Desothane® HS CA8200 Military and Defense Topcoats

### Flat and Matte Colors

<table>
<thead>
<tr>
<th>Component</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Component</td>
<td>470 grams/liter</td>
</tr>
<tr>
<td>Activator</td>
<td>206 grams/liter</td>
</tr>
</tbody>
</table>

### Flash point closed cup:

<table>
<thead>
<tr>
<th>Colors</th>
<th>Base Component</th>
<th>Activator Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gloss Colors</td>
<td>27°C (80°F)</td>
<td>29°C (84°F)</td>
</tr>
<tr>
<td>Semi-Gloss Colors</td>
<td>27°C (80°F)</td>
<td>39°C (102°F)</td>
</tr>
</tbody>
</table>

### Flat and Matte Colors

<table>
<thead>
<tr>
<th>Component</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Component</td>
<td>27°C (84°F)</td>
</tr>
<tr>
<td>Activator</td>
<td>39°C (102°F)</td>
</tr>
</tbody>
</table>

### 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.*
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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

ASC – Japan
Tel 81 561 35 5200
Fax 81 561 35 5201

ASC – South East Asia
Tel 65 6861 1119
Fax 65 6861 6162

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Fax (86-512) 6661 6868

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Fax (86-022) 2482 8600

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Fax 49 (40) 742 139 69

ASC – Middle East & India
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Fax (971) 4 883 9665

ASC – North Europe
Tel 44 (0) 1388 770222
Fax 44 (0) 1388 770288

ASC – South Europe
Tel 33 (0) 235 53 43 71
Fax 33 (0) 235 53 54 44

Americas
1 (818) 362-6711 or 1-800-AEROMIX

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