

# 683-3-2, 683-3-20

## Technical Data Sheet

### Product Group

Polyurethane topcoat

### Characteristics



Product  
Information

Chemically cured two-component clear polyurethane topcoat with two dry options designed to provide maximum protection of various substrates from various chemicals, hydraulic fluids, aviation fuels and phosphate ester fluids.

### Components



Curing Solution  
Thinner /  
Activator

Base material	683-3-2 or 683-3-20
Curing Solution	Curing Solution X-310A
Thinner	TL-59
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### Specifications



Qualified  
Product List

<u>683-3-2</u>	
Air France	SMI 70 093-1
Boeing	BMS 10-152 & BAC 5710, Ty 41
Boeing Long Beach	DPM 5557
Embraer	MEP 10-058
Goodrich	RPS 13.99
<u>683-3-20</u>	
Boeing	BMS 10-152 & BAC 5710, Ty 41
Rolls Royce (Omat)	7/187

Product specifications are constantly changing, to ensure the most accurate information regarding specifications, please check our online qualified product list (QPL) at [aerospace.akzonobel.com/products](http://aerospace.akzonobel.com/products).

### Surface Conditions



Cleaning

Surface pretreatment is an essential part of the painting process.

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### Instruction for Use



Mixing Ratio  
(volume)

683-3-2 or 683-3-20  
Curing Solution X-310A  
TL-59

2 parts  
1 part  
0-0.3 parts for spray application

**Do not add thinner for brush application**

- Stir or Shake until all pigment is uniformly dispersed before adding curing solution.
- Stir the catalyzed mixture thoroughly.



Induction Time

Not Required.



Initial Spraying  
Viscosity  
(25°C/77°F)

20 – 27 seconds signature Zahn-Cup #2



Note

Viscosity measurements are provided as guidelines only and are not to be used as quality control parameters. Certified information is provided by certification documentation available on request.



Pot life  
(25°C/77°F)

683-3-2      4 hours  
683-3-20     30 minutes



Dry Film  
Thickness  
(DFT)

25 – 51 µm  
1 – 2 mils

### Application Recommendations



Conditions

Temperature:      15 – 35°C  
                             59 – 95°F  
Relative Humidity: 25 – 80%

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Note

683-3-2 and 683-3-20 may be applied in conditions outside of the the limits shown above. Care must be exercised to ensure a satisfactory result. Please contact your local AkzoNobel Aerospace Coatings representative to determine the proper application techniques when environmental conditions fall outside of the recommended range.



Equipment

Air	Fluid tip	1.4 mm (0.055")
	Atomizing air pressure	45-65 psi
	Fluid pressure	6-8 psi
Airless	Nozzle orifice	
	0.279 mm (0.011")	60° angle
	0.330 mm (0.013")	80° angle



Number of Coats

Spray or brush apply one full wet coat.



Cleaning of equipment

MEK

### Physical Properties



Drying Times  
(25 +/- 2°C / 77  
+/- 2°F, 55 +/- 5%  
RH)

Dry to touch 683-3-2	4 hours
Dry to touch 683-3-20	30 minutes
Full cure	7 days



Theoretical Coverage

4 - 9 m<sup>2</sup> per liter base material at 25 µm dry film thickness.  
180 - 370 ft<sup>2</sup> per US gallon base material at 1 mil dry film thickness.

based on 50% transfer efficiency.



Dry Film Weight

30 g/m<sup>2</sup>/µm  
0.006 lbs/ft<sup>2</sup>/mil

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Volatile Organic  
Compounds

Max 518 g/l admixed  
Max 4.3 lbs/gal admixed

Max 550 g/l admixed with reducer  
Max 4.5 lbs/gal admixed with reducer



Gloss (60°)

Maximum 90 GU



Color

Clear



Flash-point

683-3-2	<33.9°C / 93°F
683-3-20	>38.9°C / 102°F
X-310A	<32.8°C / 91°F
TL-59	<-4.1°C / 25°F



Storage

Store the product dry and at a temperature between 5 and 38°C / 40 and 100°F per AkzoNobel Aerospace Coatings specification. Store in the original unopened containers. Storage temperature may vary per OEM specification requirements. Refer to container label for specific storage life information.

Shelf life  
(5-38°C / 41-  
100°F)

12 months per AkzoNobel Aerospace Coatings commercial specification for 683-3 base and X-310A curing solution, 24 for TL-59. Shelf life may vary due to OEM specification requirements. Refer to container label for specific shelf life information.

### Safety Precautions

Comply with all local safety, disposal and transportation regulations. Check the Material Safety Data Sheet (MSDS) and label of the individual products carefully before using the products. The MSDS's are available on request.

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**Issue date: March 2023 (supersedes October 2021) - FOR PROFESSIONAL USE ONLY**

**IMPORTANT NOTE** The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws: any person using the product for any purpose other than that specifically recommended in the technical data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Material Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing otherwise, we do not accept any liability whatsoever for the performance of the product or for any loss or damage arising out of the use of the product. All products supplied and technical advice given is subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product. Brand names mentioned in this data sheet are trademarks of or are licensed to AkzoNobel.