

# Eclipse Gloss Technical Data Sheet

## Product Group

Polyurethane topcoat

## Characteristics



Product  
Information

A chemically cured, low VOC topcoat designed to provide premium gloss and distinctness of image (DOI). This coating has a balanced formulation to provide superior chemical and stain resistance, and flexibility.

Eclipse topcoat provides a durable, long lasting, protective and decorative finish that exceeds typical OEM requirements for exterior aircraft performance.

## Components



Base material	ECL-G-XXX, ECL-G-XXXX, ECL-G-2, ECL-G-7, ECL-GC-6
Curing Solution	PC-233
Thinner	TR-109, TR-111, TR-141, TR-112, TR-113

## Specifications



Qualified  
Product List

Airbus Canada	A2MS 565-002,
Airbus Canada	A2MS 565-009
Avic Aviation	AMMS2502
Boeing	BMS 10-60, Ty I & II, CI B, Gr D
Boeing	BMS 10-72 Ty IX
Boeing	BMS 10-125, Ty II, Gr D
Boeing Long Beach	DPM 6502
Bombardier/Canadair	BAMS 565-002, Gr B, CI 33
Bombardier/Canadair	BAMS 565-009, Gr B, Ty I
Bombardier/deHavilland	DHMS C4.04, TY VI CL B GRB
Triumph	ES-336 (-) 24
Comac	CMS-CT-101, TY I, TY III
Embraer	MEP 10-069
Goodrich	LGQP 6001
Israel Aerospace Industries	MS100029E, CL HS
Irkut	741.140/21-00-00-0038-0T04/0A
MHI	MM1276, Type 1
SAE	AMS 3095* (*part of a system spec)
Sikorsky	SS 8526, TY I&II

# Eclipse Gloss Polyurethane Topcoat

Xian Aircraft Corp

XMS1622

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

- Eclipse is compatible with 10P20-44, 10P20-44MNF, 2111, 2118, 10P8-11, and other AkzoNobel primers.
- Clean aged primer or epoxy/polyurethane finishes and sand/abrade to a uniform matt finish using grade P320 sandpaper or an aluminum oxide non-woven abrasive pad.
- Clean and degrease the surface with an approved cleaning solvent prior to application of the pre-treatment or primer.
- Remove dust and debris with a tack rag or equivalent.

## Instruction for Use



Mixing Ratio  
(volume)

ECL-G-XXX, ECL-G-XXXX, ECL-G-2**, ECL-G-7, ECL-GC-6*	2 parts
PC-233	1 part
Thinner	1 part

- \*3 hour dry to tape time.
- \*\*ECL-G-2 meets performance of BMS 10-72. ECL-G-7 is the qualified Clear for BMS 10-72 Type IX.
- \*\*ECL-G-2 meets BAMS 565-002, ECL-G-7 meets BAMS 565-009.
- See thinner options under Drying Times.
- Mix the base component thoroughly to a homogeneous state prior to the addition of curing solution and thinner/reducer. Stir the catalyzed and activated mixture thoroughly prior to application.
- If a thinner other than Standard thinner is supplied, the batch acceptance requirements must be defined in TDS, (TR-109 – Standard, TR-111 – Optional, TR-112 – Optional and TR-113 – Optional)



Induction Time

Not Applicable.

## Eclipse Gloss Polyurethane Topcoat



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

30-50 seconds ISO-Cup 4  
17-23 seconds signature Zahn-Cup 2  
21-31 seconds EZ Zahn-Cup 2  
15-22 seconds Ford Cup 4



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.

Initial Spray Viscosity with ECL-G-7 viscosity at:

- FM 19 – 25" #2 Zahn Signature and PL 35" Max.
- FM 18 – 25" #4 Ford and PL 32" Max.



Pot life  
(25°C/77°F)

Gloss White	4 hours
Gloss Colors	3 hours
ECL-G-2 and ECL-G-7 Clear	4 hours
ECL-GC-6	1 hour



Note

Pot life will be reduced by varying degrees when using the alternative thinners to TR-109. See drying chart.



Dry Film  
Thickness  
(DFT)

51-76 μm  
2 -3 mils



Note

Some colors may require increased film thickness to achieve acceptable hide.

### Application Recommendations



Conditions

Temperature:	15-35°C 59-95°F
Relative Humidity:	35-75%

## Eclipse Gloss Polyurethane Topcoat



Note

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



Equipment

Spray gun type	Nozzle orifice	Product flow	Dynamic air pressure at gun-inlet*
Conventional	1.2-1.4 mm	N/A	3-5 bar / 43-73 psi
HVLP/ next generation	1.2-1.4 mm	N/A	0.7 bar / 10 psi**
Air atomizing - electrostatic	1.2-1.5 mm	230-350 ml/min	4-5 bar / 58-73 psi
Pressure atomizing (electrostatic)	0.09-0.13 mm in / 60°	260-300 ml min or 75-90 bar / 1-1.3k psi	4-4.5 bar / 58-65 psi

\*) measured with open trigger.

\*\*) measured at the air-cap. General advice to meet the HVLP / next generation spray gun requirements. Please validate with your local authorities.

Electrostatic, airless air assist or any standard suction, pressure or airless spray, and roller.



Number of Coats

Apply Eclipse topcoat in two to three full wet coats applications to a recommended dry film thickness of 50-75  $\mu\text{m}$  (2-3 mils).

When bright transparent colors (e.g. bright orange, yellow) are applied, it is advisable to first apply Eclipse foundation color in an off-white color (e.g. BAC 70846) before application of the final bright color. This to reduce the number of coats necessary for industrial hiding.

## Eclipse Gloss Polyurethane Topcoat



Note

Allow coats to dry in accordance with the table below before recoating:  
Recommended recoat time at  $77 \pm 2^\circ\text{F}$  ( $25 \pm 1^\circ\text{C}$ ) /  $50 \pm 5\%$  RH) \*.

<u>Thinner/Reducer</u>	<u>Recommended Re-coat Time</u>
TR-109	45-120 minutes
TR-111	30-60 minutes
TR-112	20-40 minutes
TR-113	15-30 minutes
TR-141	45-120 minutes

\*Dry time refers to the elapsed time between the start of the first coat application and the start of the second coat application. Paint will transfer when touched and is not a cause for concern.

### Overcoat Window

When applying Eclipse, color on color, the overcoat windows must be observed.

The overcoat window, before sanding is required, is 24 hours when TR-109 or TR 141 was used in the undercoat.

The overcoat window, before sanding is required, is 12 hours when TR-111 was used in the undercoat. If the undercoat has dried longer than the allotted time, sand/abrade to a uniform matt finish using grade P220 sandpaper an aluminum oxide non-woven abrasive pad. Clean Sanded area with AkzoNobel Ultra Prep Surface Cleaner or isopropyl alcohol, then tack to remove all dust prior to topcoat. The overcoat window will decrease as temperature and humidity increase.



Cleaning of  
Equipment

Solvent Cleaning C28/15 or TR-15 (electrostatic equipment) Solvent Cleaning C28/15 or TR-19 for other spray equipment

# Eclipse Gloss Polyurethane Topcoat



Note

The quality of the application of all coatings will be influenced by the spray equipment chosen and the temperature, humidity, and air flow of the paint application area.

When applying the product for the first time, it is recommended that test panels be prepared to identify the best equipment settings to be used in optimizing the performance and appearance of the coating.

## Physical Properties



Drying Times  
(25°C / 77°F,  
55% RH)

Dry to touch	3.25 hours	(TR-109)
	3.25 hours	(TR-111)
	1.75 hours	(TR-112)
	45 mins	(TR-113)
	3.25 hours	(TR-141)

Dry to tape	10 – 12 hours	(TR-109)
	7 hours	(TR-111)
	4.5 hours	(TR-112)
	3 hours	(TR-113)
	10 – 12 hours	(TR-141)

- TR-109, TR-111, TR-112 and TR-113 Boeing approved BMS 10-72 and BMS 10-60.
- TR-112 for roller application and TR-113 for touch up and markings only.
- TR-141 formulated to optimize wet edge performance at elevated temperatures 85-100°F / 27-38°C.



Theoretical  
Coverage

22 m<sup>2</sup> per liter ready to apply at 25 µm dry film thickness.  
900 ft<sup>2</sup> per US gallon ready to apply at 1 mil dry film thickness.



Dry Film Weight

1.57 g/m<sup>2</sup>/µm.  
0.0082 lbs/ft<sup>2</sup>/mil.

## Eclipse Gloss Polyurethane Topcoat



Note For white and off-white color scheme.  
Other colors available upon request.



Volatile Organic Compounds Maximum 420 g/l.  
Maximum 3.5 lbs/gal.



Gloss (60°) Minimum 90 GU.



Color As required.



Flash-point	ECL-G-XXX	25°C / 77°F
	ECL-G-XXXX	25°C / 77°F
	ECL-G-2	25°C / 77°F
	ECL-G-7	25°C / 77°F
	ECL-GC-6	27°C / 80.6°F
	PC-233	166°C / 330.8°F
	TR-109	36°C / 96.8°F
	TR-111	34°C / 93.2°F
	TR-112	34°C / 93.2°F
	TR-113	34°C / 93.2°F
	TR-141	34°C / 93.2°F



Storage Store the product dry and at a temperature between 5 and 38°C / 41 and 100°F per AkzoNobel Aerospace Coatings specification. Store in the original unopened containers. Storage temperature and shelf life may vary per OEM specification requirements. Refer to container label for specific storage life information.

Shelf life	ECL-G-XXX	24 months
5 - 38°C	ECL-G-XXXX	24 months
(41 - 100°F)	ECL-G-2	24 months
	ECL-G-7	24 months

## Eclipse Gloss Polyurethane Topcoat

ECL-GC-6	24 months
PC-233	24 months
TR-109	24 months
TR-111	24 months
TR-112	12 months
TR-113	12 months
TR-141	24 months

### 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 2022 (supersedes November 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.