

Eclipse

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. When used with AkzoNobel primers 10P20-44 (BMS 10-79, TY II & III, DMS 2104, Comp B, BAMS 565-008, Ty I & II), 10P20-44M or 10P20-44MNF (BMS 10-72 Type IX) or 10P20-12 (DMS 2104, Comp C), the Eclipse topcoat provides a durable, long lasting, protective and decorative finish that exceeds typical OEM requirements for exterior aircraft performance.

Components



Curing Solution
Thinner

Curing Solution PC-233

See Section "Physical Properties" for thinner/reducer options

Specifications



Qualified
Product List

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, CI A, Gr B
Bombardier/Canadair	BAMS 565-009, Ty I, CI A, Gr B
Bombardier/deHavilland	DHMS C4.04, TY VI CL B GRB
Bombardier/Shorts	SMS 92, Ty 2, Gr B
Comac	CMS-CT-101, TY I, TY III
EADS (CASA)	Z-12.388
Embraer	MEP 10-069
FedEx	99-015 Appendix II
Goodrich	LGQP 6001
Israel Aerospace Industries	MS100029E, CL HS
Irkut	741.140/21-00-00-0038-0T04/0A
Ilyushin	TI 756.03.583
Ilyushin 76	И 756.18.407-2007

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MHI	MM1276, Type 1
Pilatus	VV0605-28
Saab	TEK00-0161MT
SAE	AMS 3095* (*part of a system spec)
Sikorsky	SS 8526, TY I&II
Xian Aircraft Corp	XMS1622

For most recent up-date or missing specifications please check the qualified product list (QPL) on www.akzonobel.com/aerospace

Surface Conditions



Cleaning

- Surface pretreatment is an essential part of the painting process
- Please refer to Eclipse application process standard for detailed instructions. Contact your AkzoNobel Aerospace Coatings technical consultant for assistance with this standard. Eclipse is compatible with 10P20-44, 10p20-44MNF, 2111, 2118, 10p8-11, and other AkzoNobel primers, or existing finishes that have been properly sanded and cleaned

Instruction for Use



Mixing Ratio
(volume)

Type	Product code of base component	Curing Solution	Mix Ratio
Gloss	ECL-G-XXX	PC-233	2:1:1
Semi-gloss	ECL-SG-XXX	PC-233	3:1
Flat	ECL-F-XXX	PC-233	3:1
Non-metallic base	ECL-G-XXXX	PC-233	2:1:1
Non-metallic (Mica)	ECL-G-8XXXM	PC-233	2:1:1
Non-metallic Mica clear	ECL-G-8XX	PC-233	2:1
Non-metallic Mica clear	ECL-G-856	PC-233	3:1
Metallic	ECL-G-900	PC-233	2:1:1/2 (TR-111)
Clear	ECL-G-2**	PC-233	2:1:1
Clear	ECL-G-7	PC-233	2:1:1
Clear	ECL-GC-6*	PC-233	2:1

- *3 hour dry to tape time.
- ****Note:** ECL-G-2 meets performance of BMS 10-72. ECL-G-7 is the qualified Clear for BMS 10-72 Type IX.
- ****Note:** ECL-G-2 meets BAMS 565-002, ECL-G-7meets 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.

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Induction Time

15 – 30 minutes



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.



Pot life
(25°C/77°F)

Gloss White	4 hours
Gloss Colors	3 hours
Semi-gloss (all colors)	2 hours
Flat (all colors)	2 hours
Mica 2 & 3 component	3 hours
ECL-G-2 and ECL-G-7 Clear	4 hours
ECL-GC-6	1 hour



Pot Life
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 micron (µm)
2-3 mils

- Note: Some colors may require increased film thickness (3 or more coats) to achieve acceptable hide. Please refer to Eclipse application process standard for detailed instructions.

Required for ECL-G-900

62 – 76 micron
2.5 – 3 mils

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Application Recommendations



Conditions

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



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 in order to identify the best equipment settings to be used in optimizing the performance and appearance of the coating.



Equipment

Electrostatic, airless air assist or any standard suction, pressure or airless spray, and roller (See application process standard for roller instructions).

Air	1.2 - 1.4 mm (.047-.055 inch) nozzle orifice Air pressure 35 – 55 PSI
HVLP	1.2 - 1.4 mm (.047 - .055 inch) nozzle orifice Air pressure 10 PSI at the air-cap Refer to equipment manufacturer manual for
Air Assist Airless Electrostatic	Fluid flow rate and atomizing air pressures .23 – .34 mm (.009 – .013 inch) nozzle orifice
Air spray Electrostatic	Atomizing air pressure 55-65 PSI Tip size: 7-10 / 8-10, 7-12 / 8-12
	1.2 – 1.5 mm (.047 - .059 inch) nozzle orifice Air pressure 35 – 45 PSI



Number of
Coats

Apply Eclipse topcoat in two to three full wet coats applications to a recommended dry film thickness of 2 – 3 mils (50 – 75 microns). More, if necessary to achieve acceptable hide.

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Allow coats to dry in accordance with the table below before recoating:
Recommended recoat time at 77° ± 2°F (25 ± 1°C) 50 ± 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



*Note

*Note: 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.



Number of coats
[Continued](#)

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, abrade with a coarse Scotch-Brite® pad or non-stearate 220 grit sandpaper to break the gloss prior to the application of overcoat, markings and speed lines.

Note: 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.

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Physical Properties

Reducer Options

Various thinner options are available dependent upon dry to tape time required. At standard temperature and humidity conditions, TR-109 will provide the indicated dry to tape times with a wet edge time of 30-60 minutes. At standard conditions, TR-111 will provide a wet edge time of 20-40 minutes.

TR-112 and TR-113 are recommended for touch-up areas and speed lines only and are pre-adjusted to meet specific dry times. No additional accelerator should be added.



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

Thinner/ Reducer	77°F (25°C)	77°F (25°C) 50% RH	90°F (32°C) 40% RH	120°F (48°C) 10% RH
TR-109	<u>Pot Life</u>	10-12 hours	8-9 hours	4-5 hours
TR-111	3-4 hours	7-8 hours	4-5 hours	3-4 hours
TR-112	1.5-2 hours	5-6 hours	2-3 hours	1.5-2 hours
TR-113	1-1.5 hours	2-3 hours	1-2 hours	<1 hours
TR-141	0.5-1 hour	10-12 hours	7-9 hours	4-6 hours



Additional
Thinner
Information
@ air dry
condition of 77°F
(25°C) 50% RH

Thinner/ Reducer	<u>Dry to touch</u>	<u>Dry to tape</u>	<u>Comments</u>
TR-109	3.25 hours	10-12 hours	Standard thinner, Boeing approved BMS 10-72, BMS 10-60
TR-111	3.25 hours	7 hours	Boeing approved BMS 10-60
TR-112	1.75 hours	4.5 hours	Suggested for roller application. See application process standard for details. Boeing approved.
TR-113	45 minutes	3 hours	Touch-up and markings only. Boeing approved.
TR-141	3.25 hours	10-12 hours	Formulated to optimize wet edge performance at elevated temperatures 85-100°F / 27-38°C.

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Theoretical Coverage

22 m² per liter ready to apply at 25 µm dry film thickness
900 ft² per US gallon ready to apply at 1 mil dry film thickness



Dry Film Weight

For white and off-white:

1.57 g/m²/micron
0.0082 lbs/ft²/mil

Other colors available upon request



Volatile Organic Compounds

Gloss ECL-G	420 g/l (3.5 lbs/gal) max
Semi-gloss ECL-SG	420 g/l (3.5 lbs/gal) max
Flat ECL-F	420 g/l (3.5 lbs/gal) max
Non-metallic base ECL-G	420 g/l (3.5 lbs/gal) max
Non-metallic mica clear ECL-G-8XX	420 g/l (3.5 lbs/gal) max
Metallic ECL-G-900	420 g/l (3.5 lbs/gal) max
Clear ECL-G-2	503 g/l (4.2 lbs/gal) max
Clear ECL-G-7	496 g/l (4.1 lbs/gal) max
Clear ECL-GC-6	420 g/l (3.5 lbs/gal) max



Gloss (60°)

Gloss	90 minimum
Semi	20 – 40
Flat	5 maximum



Color

As required



Flash-point

Refer to the Material Safety Data Sheet (MSDS) for each individual component for specific flashpoint information.



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.

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Shelf life 24 months (Eclipse base, PC-233, TR-109, TR-111, TR-141) per
5 - 38°C AkzoNobel Aerospace Coatings commercial specification. 12 months for
(40 - 100°F) TR-112, and
TR-113, per AkzoNobel Aerospace Coatings commercial specification.

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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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.

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