Eclipse®

AkzoNobel
Tomorrow's Answers Today

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 10-72 Type VIII & IX, BMS 10-79, TY II & III, DMS 2104, BAMS 565-008, Ty I & II), 10P20-44M (BMS 10-72 Type VIII & IX) or 10P20-12 (DMS 2104), 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/Reducer

Curing Solution PC-233
See Section “Physical Properties” for thinner/reducer options

Specifications

Qualified Product List

Boeing	BMS 10-60, Ty I & II, Cl 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, Cl A, Gr B
Bombardier/Canadair	BAMS 565-009, Ty I, Cl A, Gr B
Bombardier/deHavilland	DHMS C4.04
Bombardier/Shorts	SMS 92, Ty 2, Gr B
EADS (CASA)	Z-12.388
Embraer	MEP 10-069
FedEx	99-015 Appendix II
Pilatus	VV0605-28
Saab	TEK00-0161MT

The complete AkzoNobel Aerospace Coatings qualified product list (QPL) can be found at: **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.

AkzoNobel Aerospace Coatings
1 East Water Street, Waukegan, IL 60085, USA - Phone (847) 623 4200, Fax (847) 625 3200
Rijksstraatweg 31, 2171 AJ Sassenheim, The Netherlands - Phone (31) 71 308 2905, Fax (31) 71 308 2056

Internet: www.akzonobel.com/aerospace

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.
- 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.

Induction Time

15 – 30 minutes

Initial Spraying Viscosity (25ºC/77ºF)

30 – 50 seconds ISO-Cup #4
17 – 23 seconds signature Zahn-Cup 2
21 – 31 seconds EZ 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 (25ºC/77ºF)

White	4 hours
Colors	3 hours

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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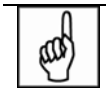
Application Recommendations

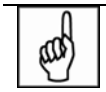
Conditions

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



Note

Eclipse® can be applied in conditions outside of the limits shown above. Please contact your AkzoNobel Aerospace Coatings technical consultant to determine appropriate application techniques.



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
Air Assist Airless Electrostatic	.23 – .34 mm (.009 – .013 inch) nozzle orifice Atomizing air pressure 55-65 PSI
Air spray Electrostatic	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 applications to a recommended dry film thickness of 2 – 3 mils (50 – 75 microns). More, if necessary to achieve acceptable hide.
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)*

Thinner/Reducer	Recommended Re-coat Time
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: 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.

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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.

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 according to AITM 2-0011 (25 +/- 2ºC / 77 +/- 2ºF, 55 +/- 5% RH)

Thinner/ Reducer	77°F (25°C) Pot Life	77°F (25°C) 50% RH	90°F (32°C) 40% RH	120°F (48°C) 10% RH
TR-109	3-4 hours	10-12 hours	8-9 hours	4-5 hours
TR-111	1.5-2 hours	7-8 hours	4-5 hours	3-4 hours
TR-112	1-1.5 hours	5-6 hours	2-3 hours	1.5-2 hours
TR-113	0.5-1 hour	2-3 hours	1-2 hours	<1 hours
TR-128	1.5-2 hours	7-8 hours	4 hours	3-4 hours
TR-141	3 hours	10-12 hours	7-9 hours	4-6 hours

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

Thinner/ Reducer	Dry to touch	Dry to tape	Comments
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-128	3.25 hours	7 hours	Formulated to provide 4 hours DTT at 90°F (32°C). Similar DTT as TR-111 but with improved flow and viscosity profile. 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.

Theoretical Coverage

22 m^2 per liter ready to apply at 25 μm dry film thickness
900 ft^2 per US gallon ready to apply at 1 mil dry film thickness

Dry Film Weight

For white and off-white:

1.57 g/m^2/micron
0.0082 lbs/ft^2/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

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Gloss (60º)	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 38ºC / 40 and 100ºF 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 (40 - 100°F)	24 months (Eclipse® base, PC-233, TR-109, TR-111, TR-141) per AkzoNobel Aerospace Coatings commercial specification. 12 months for TR-112, TR-113, TR-128 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 MSDSs are available on request.

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