

Eclipse Semi-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-SG-XXX |
| Curing Solution | PC-233 |
| Thinner | TR-109, TR-111, TR-141, TR-112, TR-113 |

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 | I 756.18.407-2007 |
| MHI | MM1276, Type 1 |

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| | |
|--------------------|------------------------------------|
| Pilatus | VV0605-28 |
| Saab | TEK00-0161MT |
| SAE | AMS 3095* (*part of a system spec) |
| Sikorsky | SS 8526, TY I&II |
| 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.

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.
- Eclipse semi-gloss topcoat must be applied over fresh primer or topcoat. Applying direct to a sanded surface may result in a mottled appearance when it cures.

Instruction for Use



Mixing Ratio
(volume)

| | |
|------------|---------|
| ECL-SG-XXX | 3 parts |
| PC-233 | 1 part |
| Thinner | 1 part |

- 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).

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Induction Time Not Applicable.



Initial Spraying 30–50 seconds ISO-Cup 4
Viscosity 17–23 seconds signature Zahn-Cup 2
(25°C/77°F) 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 Semi-gloss (all colors) 2 hours
(25°C/77°F)



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



Dry Film 51-76 µm
Thickness 2-3 mils
(DFT)



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

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Application Recommendations



Conditions

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



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.

| 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 | 1.2-1.5mm | 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.

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Number of
Coats

Apply Eclipse topcoat in two to three full wet coats applications to a recommended dry film thickness of 50 – 75 µm (2 – 3 mils).

Some colors may require increased number of coats to achieve acceptable hide.



Note

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 |

*Dry time refers to the elapsed time between the start of the first coat application and the start of the second coat application. Paint should have very little transfer when touched.

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.

The overcoat window will decrease as temperature and humidity increase.

When sanding of eclipse semi-gloss topcoat is required, you must reapply primer or eclipse gloss topcoat prior to applying eclipse flat topcoat, or the color may appear mottled or the color may appear not to match. Clean sanded areas with AkzoNobel Ultra Prep Surface Cleaner or isopropyl alcohol prior to

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reapplying topcoat.

When doing rework, it is recommended to spray entire panels using the same application method as the original application.



Cleaning of
Equipment

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



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.

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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

1.57 g/m²/µm.
0.0082 lbs/ft²/mil.



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°)

20 - 40 GU.



Color

As required.



Flash-point

| | |
|------------|-----------------|
| ECL-SG-XXX | -4°C / 24.8°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.

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| | | |
|--------------|------------|-----------|
| Shelf life | ECL-SG-XXX | 24 months |
| 5 - 38°C | PC-233 | 24 months |
| (41 - 100°F) | 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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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.