# Eclipse

## Technical Data Sheet

### Product Group

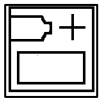
Polyurethane topcoat

### 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

| | |
|---|---|
| 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 | BAMS 565-002, Cl A, Gr B |
| Bombardier | 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 |
| Ilyushin 76 | И 756.18.407-2007 |
| MHI | MM1276, Type 1 |
| Pilatus | VV0605-28 |
| Saab | TEK00-0161MT |
| SAE | AMS 3095* (*part of a system spec) |

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



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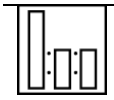
## Surface Conditions

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.

## Instruction for Use



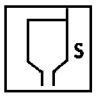
Mixing Ratio (volume)

| 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.

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
15 – 22 seconds Ford Cup #4



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| | |
|---|---|
| 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) | |
|---|---|
| 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)<br>2-3 mils<br>- 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.<br><br>**Required for ECL-G-900**<br>62 – 76 micron<br>2.5 – 3 mils |

## Application Recommendations

| | | |
|---|---|---|
| Conditions | Temperature: | 15 – 35°C<br>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. |



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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<br>Air pressure 35 – 55 PSI |
| HVLP | 1.2 - 1.4 mm (.047 - .055 inch) nozzle orifice<br>Air pressure 10 PSI at the air-cap |
| Air Assist Airless Electrostatic | .23 – .34 mm (.009 – .013 inch) nozzle orifice<br>Atomizing air pressure 55-65 PSI |
| Air spray Electrostatic | 1.2 – 1.5 mm (.047 - .059 inch) nozzle orifice<br>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

*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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# Eclipse

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

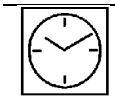
Solvent Cleaning C28/15 or TR-15 (electrostatic equipment) Solvent Cleaning C28/15 or TR-19 for other spray equipment.

## 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 (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-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-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<br>Semi 20 – 40<br>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<br>5 - 38°C<br>(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, and<br>TR-113, per AkzoNobel Aerospace Coatings commercial specification.<br><br>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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