

# Eclipse Special Effects

## Technical Data Sheet

### Product Group

### Polyurethane Top Coat

### Characteristics

Eclipse Special Effects is a chemically cured, low VOC special effect topcoat designed to be used with an Eclipse Gloss base color. This coating has a balanced formulation to provide superior chemical, stain resistance and flexibility when used in conjunction with Eclipse Clear.



Product Information

Eclipse topcoats provide a durable, long lasting, protective and decorative finish that exceed typical OEM requirements for exterior aircraft performance.

### Components



Base	ECL-G-8XXXM
Base	ECL-G-8XX
Base	ECL-G-856
Base	ECL-G-9XX
Curing Solution	Curing Solution PC-233
Thinner	Thinner TR-109
Thinner	Thinner TR-111
Thinner	Thinner TR-112
Thinner	Thinner TR-113

## Eclipse Special Effects

### Specifications



Qualified Product List

Airbus Canada	A2MS 565-009
Avic Aviation	AMMS2502
Boeing Long Beach	DPM 6502
Boeing	BMS 10-125, TY II, GR D
Boeing	BMS 10-60, TYI&II CLB GRD
Bombardier Canadair	BAMS 565-002, GR B
Bombardier Canadair	BAMS 565-009, TY I GR B
Comac	CMS-CT-101, TY I
Comac	CMS-CT-101, TY III
EADS (CASA)	Z-12.140MIL-P-23377 Ty I
Embraer	MEP 10-069
Federal Express	84-010
Goodrich Corporation	LGQP 6001
Irkut	741.14021-00-00-0038-0T040A
Israel Aerospace Industries	MS100029E, CL HS
Mitsubishi	MM1276, TY I
Pilatus	VV0605-28
SAE International	AMS3095B
Saab	TEK 00-0161MT
Sikorsky	SS 8526, TY I&TY 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](http://aerospace.akzonobel.com/products).

### Surface Conditions



Surface Preparation/  
Cleaning

Eclipse Special Effects topcoat is designed to be used over Eclipse Gloss topcoat foundation color (ECL-G-XXXX). Observe the recoatability times of the previous layer of Eclipse Gloss topcoat.

Ensure the base layer is free from contamination from layout, scuffing, and masking by cleaning the surface. Use an appropriate mild cleaning solvent such as Akzo Nobel Ultra Prep Surface Cleaner or isopropyl alcohol.

Remove dust and debris with a clean tack rag or equivalent.

ECL-G-8XXXM may be applied over fresh primer, without the Eclipse Gloss foundation color, depending on the desired effect.

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### Instruction for Use



Spray Application (Mix Ratio)

	Volume
ECL-G-8XXXM	2 parts
ECL-G-8XX	2 parts
ECL-G-856	3 parts
ECL-G-9XX	2 parts
Curing Solution PC-233	1 part
Thinner*	1 part

\* Thinner options: Thinner TR-109, Thinner TR-111, Thinner TR-112, Thinner TR-113

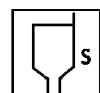
ECL-G-8XXXM	2:1:1
ECL-G-8XX	2:1
ECL-G-856	3:1
ECL-G-9XX	2:1:1

- Allow products to acclimatize to ambient conditions before use.
- Stir or shake the base component thoroughly to a homogeneous state prior to the addition of the curing solution.
- Add curing solution PC-233 and stir the catalyzed mixture thoroughly.
- Add the thinner and stir the catalyzed mixture again thoroughly prior to application.
- No additional thinner is needed in ECL-G-8XX and ECL-G-856.



Induction Time

Not Applicable.



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

30 – 50 seconds ISO Cup #4  
17 – 23 seconds Gardner Signature Zahn Cup #2  
21 – 31 seconds EZ Zahn Cup #2  
15 – 22 seconds Ford Cup #4

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.



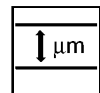
Pot life (25°C/77°F)

Mica 2 & 3 component 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)

1.0-1.2 mils / 25-30 µm for ECL-G-8XXXM and ECL-G-8XX.  
2.0-3.0 mils / 50-75 µm for ECL-G-856.  
2.5-3.0 mils / 64-76 µm for ECL-G-9XX.



Note

Some colors may require increased film thickness to achieve desired effect.

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## Application Recommendations



Conditions

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



Note

Eclipse Special Effects 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 Recommendation

Spray gun type	Product supply	Fluid Pressure	Nozzle orifice	Product flow	Dynamic air pressure at gun-inlet *
Conventional	NA	N/A	1.2-1.4 mm	N/A	3-5 bar / 43-73 psi
HVLP / Next Generation	N/A	N/A	1.2-1.4 mm	N/A	2-2.5 bar / 29-36 psi**
Air Atomizing (electrostatic)	N/A	N/A	1.2-1.5mm	230-300 ml/min	4-5 bar / 58-73 psi
Pressure Atomizing (electrostatic)	N/A	N/A	N/A	N/A	N/A

All filters in the application equipment should be removed to avoid clogging. Depending on the type of special effect pigment used, the use of pressure atomizing spray equipment (airless or air assisted) is not advised. Please consult your AkzoNobel technical representative. Extra attention should be paid when cleaning the equipment.



Note

\*Measured with an open trigger.  
\*\*General advice to meet the HVLP / next-generation spray gun requirements.  
Please validate with your local authorities.



Number of Coats

Apply Eclipse Special Effects in one to two full wet coat applications to the recommended dry film thickness. Apply a single wet coat. Allow sufficient flash-off time between coats at ambient conditions in accordance with the table below. Apply a second wet coat. Repeat this if additional coats are needed in order to achieve the desired effect.

Thinner/Reducer	Recommended Flash-Off Time
TR-109	45-120 minutes
TR-111	30-60 minutes
TR-112	20-40 minutes
TR-113	15-30 minutes



Note

Flash-off 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 to indicate the paint is ready for application of the next coat.



Cleaning of Equipment

Solvent Cleaning C28/15 (electrostatic equipment) 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, 50% RH)	
Dry to touch	3.25 hours
	3.25 hours
	1.75 hours
	45 minutes
	TR-109
	TR-111
	TR-112
	TR-113

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Dry to tape	10 – 12 hours	TR-109
	7 – 8 hours	TR-111
	5 – 6 hours	TR-112
	2 – 3 hours	TR-113
(32°C / 90°F, 40% RH)		
Dry to tape	8 – 9 hours	TR-109
	4 – 5 hours	TR-111
	2 – 3 hours	TR-112
	1 – 2 hours	TR-113
(48°C / 120°F, 10% RH)		
Dry to tape	4 – 5 hours	TR-109
	3 – 4 hours	TR-111
	1 – 2 hours	TR-112
	<1 hours	TR-113

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.

TR-109, TR-111, TR-112 and TR-113 are Boeing approved per BMS 10-72 and BMS 10-60

ECL-G-8XX and ECL-G-856 have a dry to touch time of 3-4 hours and a dry to tape time of 6-8 hours at standard temperature and humidity conditions (25°C / 77°F, 50% RH).



Note

Eclipse Special Effects topcoat may be recoated with an additional application of Eclipse Special Effects topcoat within 24 hours if TR-109 was used in the undercoat. Max recoat time is 12 hours if TR-111 was used in the undercoat. Max recoat time is 24 hours for ECL-G-8XX and ECL-G-856. If the undercoat has dried longer than the allotted time, sand/abrade to a uniform matt finish using grade P320 sandpaper or an aluminum oxide non-woven abrasive pad and reapply the Eclipse Gloss foundation color before the Eclipse Special Effects topcoat application.

Dry times and recoat times will vary depending on combinations of temperature, humidity, and airflow.



Theoretical Coverage

Dependent on color.



Dry Film Weight

Dependent on color



Volatile Organic Compounds

Maximum 420 g/l  
Maximum 3.5 lbs/gal



Gloss (60°)

Minimum 90 GU



Color

As required.



Flash Point

ECL-G-8XXXM	25°C / 77°F
ECL-G-8XX	25°C / 77°F
ECL-G-856	25°C / 77°F

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	ECL-G-9XX	25°C / 77°F
	Curing Solution PC-233	166°C / 330.8°F
	Thinner TR-109	36°C / 96.8°F
	Thinner TR-111	34°C / 93.2°F
	Thinner TR-112	34°C / 93.2°F
	Thinner TR-113	34°C / 93.2°F
Shelf life 5 - 38°C (41 - 100°F)	ECL-G-8XXXM	24 months
	ECL-G-8XX	24 months
	ECL-G-856	24 months
	ECL-G-9XX	24 months
	Curing Solution PC-233	24 months
	Thinner TR-109	24 months
	Thinner TR-111	24 months
	Thinner TR-112	24 months
	Thinner TR-113	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.

**Revision date: August 2024 (supersedes October 2023) - 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