

Aerobase Special Effects Technical Data Sheet

Product Group

Polyurethane Topcoats

Characteristics



Product
Information

Aerobase Special Effects is a VOC compliant isocyanate cured polyurethane special effect coating and is part of the coatings system consisting of Aerobase - Aerobase Special Effects - Aviox Clearcoat UVR system for exterior application of commercial aircraft.

This system provides uniform coverage and appearance in one coat application for most of the colors and effects. When used with Aviox Clearcoat UVR this system provides a durable, long lasting, protective and decorative finish that exceeds typical OEM requirements for exterior aircraft performance.

The main benefits of our leading Aerobase - Aerobase Special Effects - Aviox Clearcoat UVR system are:

- Unique and uniform sparkling effect appearance on aircraft livery
- Repairability
- Excellent gloss- and color- retention
- Opacity at low film thickness
- Short tape time
- Superior chemical and stain resistance
- Low dirt adhesion

Components



Base material
Curing Solution
Activator

Aerobase Special Effects
Aerobase Curing Solution
Aerobase Standard Activator

Specifications



Qualified
Product List

Airbus
SAE International

AIMS 04-04-025
AMS 3095A

Product specifications change constantly, to ensure the most accurate information regarding specifications, please check our online qualified product list (QPL) at aerospace.akzonobel.com/products.

Aerobase Special Effects

Surface Conditions



Cleaning

- Aerobase Special Effects is compatible with and applied on top of Aerobase.
- Observe the recoat times of the previous layer of Aerobase.
- Apply Aerobase base color on clean primer, sealer or Aerobase layer. Remove oil, grease and other contamination prior to application.
- Recondition aged primers or topcoats with grade P320 sanding paper or aluminum oxide non-woven abrasive material, type very fine, to a uniform matt surface.
- Remove dust with e.g. tack rags just prior to application of Aerobase.

Instruction for Use



Mixing Ratio

	Volume (v/v)	Weight (w/w)
Aerobase Special Effects	5 parts	100 parts
Aerobase Curing Solution	1 part	18 parts
Aerobase Standard Activator	1 part	14 parts

- Allow products to acclimatize to room temperature before use.
- Stir or shake Aerobase Special Effects thoroughly until all pigments are uniformly dispersed before adding the Aerobase Curing Solution.
- Add Aerobase Curing Solution and stir the catalyzed mixture thoroughly.
- Add Aerobase Standard Activator and stir the catalyzed mixture again thoroughly.



Induction time

Not applicable. The product is ready for use immediately after mixing.



Initial Spraying Viscosity (23°C/73°F)

30 – 55 seconds ISO-Cup #4 for all colors
16 – 24 seconds Gardner Signature Zahn-Cup #2 for all colors



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 (23°C/73°F)

2 hours



Dry Film Thickness (DFT)

Depending on the color/effect to apply
40 – 70 μm
1.6 – 2.8 mil

Aerobase Special Effects



Note

The application and mixing characteristics of High Solid products differ from conventional products. Mix base and hardener for at least 2 minutes thoroughly. The high solid content causes a rapid film build-up.

Application Recommendations



Conditions

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



Note

Aerobase Special Effects may be applied in conditions outside of the the limits shown above. Care must be exercised to ensure a satisfactory result. Please contact your local AkzoNobel Aerospace Coatings representative to determine the proper application techniques when environmental conditions fall outside of the recommended range.



Equipment recommendation

Spray Gun Type	Nozzle Orifice	Product Flow ¹	Dynamic Air Pressure at gun-inlet ²
Conventional	1.2 – 1.5mm	280 – 320 mL/min	4 – 4.5 bar/58 – 65 psi
HVLP / next generation	1.2 – 1.5mm	280 – 320 mL/min	2 – 2.5 bar/29 – 36 psi ³
Air atomizing (electrostatic)	1.2 – 1.5 mm	340 – 360 mL/min	4 – 4.5 bar/58 – 65 psi

¹ Product Flow not applicable when using gravity / suction feed guns.

² Dynamic Air Pressure at gun-inlet measured with an open trigger.

³ General advice to meet the HVLP / next generation spray gun requirements, please validate with your local authorities.



Note

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 representative if you are not sure. Extra attention should be paid when cleaning the equipment.

Aerobase Special Effects



Application
scheme

Step 1: Aerobase (base color)

- Observe the recoat limits of the relevant primer.
- Apply a homogeneous and wet coat to achieve a dry film thickness of 30 to 50 μm / 1.2 to 2.0 mil depending on the color and effect. For more details check the technical data sheet of Aerobase.

Step 2: Aerobase Special Effects

- Respect the overcoat window of Aerobase (2 – 168 hours).
- Apply a homogeneous and wet coat to achieve a dry film thickness of 40 to 60 μm / 1.6 to 2.4 mil depending on the color and effect. When the effect is not achieved after one cross coat, an extra layer can be applied after 15 to 90 minutes flash-off time.

Step 3: Aviox Clearcoat UVR

- Respect flash-off time over Aerobase Special Effects (2 – 96 hours).

To obtain a smooth surface, apply Aviox Clearcoat UVR in 1 or 2 coats with 60 minutes solvent flash-off time in between, depending on the surface appearance (roughness) of the special effect layer. For more details check the technical data sheet of Aviox Clearcoat UVR



Cleaning of
equipment

Solvent Cleaning C28/15 or Solvent Cleaning 98068.

Because Aerobase Special Effects is a fast-drying base coat, it is important to clean the equipment as soon as possible after completion of the paint job.



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.

Aerobase Special Effects

Physical Properties



Drying
Times

Dry to surface
Dry to tape
Recoat maximum

23°C/73°F – 55%RH
1.5 – 2 hours
2 – 3 hours
96 hours

Taping directly on a special effect coating may result in rough edges after tape removal.

To obtain the best results when taping it is advised to apply one layer of Aviox Clearcoat UVR after minimum 4 hours drying time. In this case the dry to tape times of the Aviox Clearcoat UVR will be applicable.

Aerobase Special Effect as such cannot be abraded if the overcoat window has exceeded or for repairs without compromising the appearance. If the overcoat window is exceeded, activate the surface with aluminum oxide non-woven abrasive material, type very fine, or grade P320 sanding paper before re-applying the Aerobase Special Effect System.

If it can be foreseen the overcoat window of Aerobase Special Effect will be exceeded, we advise to apply locally one layer of Aviox Clearcoat UVR within the overcoat window (2 – 96 hours). The Aviox Clearcoat UVR coat can be activated after it exceeds the recoat window without compromising the appearance of the special effect.



Theoretical
Coverage

12 m² per liter ready to apply at 40 µm dry film thickness
510 ft² per US gallon ready to apply at 1.6 mil dry film thickness



Dry film
weight

1.43 – 1.56 g/m²/µm
0.0071 – 0.0081 lbs/ft²/mil



Volatile
Organic
Compounds

Maximum 420 g/l
Maximum 3.5 lb/gal



Color

Any special effect color for any aircraft livery

Aerobase Special Effects



Gloss (60°) Not applicable



Flash-point	Aerobase Special Effects	>21°C /70°F
	Aerobase Curing Solution	>21°C /70°F
	Aerobase Standard Activator	>21°C /70°F



Storage Store the product dry and at a temperature between 5 – 35°C / 41 – 95°F. Store in the original unopened containers. Refer to container label for specific storage life information.

Shelf life	Aerobase Special Effects	18 months
5-35°C / 41-95°F	Aerobase Curing Solution	24 months
	Aerobase Standard Activator	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.

Issue date: April 2022 (supersedes December 2021) - 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.