TOPCOAT FRS40 METALLIC

Technical Data Sheet

Product Group

Polyurethane Top Coat

Characteristics

Product Information

Three-component metallic effect solvent-borne polyurethane topcoat for aircraft interiors.
FRS40 metallic is recommended to use on FRS30 or FR4-45 surfacer.
FRS40 metallic can be recoated with 1500-FR or 1500-HD varnish.
For specific colors and application, please refer to the corresponding application process

Components

Base	FRS40 Base
Curing Solution	FRS Hardener
Thinner	Thinner FRSL
Thinner	Thinner P2-2 Fast
Thinner	Thinner P6 Fast
Thinner	Thinner P2

Specifications

Qualified Product List

C&D ZODIAC	CDM240-00
C&D ZODIAC	CDM240-01

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

Surface Preparation/ Cleaning

Can be applied on phenolic and plastic composites and on aluminium.
For surfaces that require surface preparation, the use of FRS30 or FR4-45 filler is recommended.

Application on a composite substrate (new or reworked):
FRS30 or FR4-45 are used as a primer/surfacer (see product data sheet for surface preparation).
FRS30 or FR4-45 should be sanded with a P240 to P400 grade abrasive paper(dry or wet) and cleaned with isopropyl alcohol or Essence F.

Application on a plastic substrate (new or reworked):
Except where there are surface defects, FRS40 can be applied directly onto plastics, except polycarbonates. The substrate should be sanded with a P240 to P400 grade paper. Then it should be blown dried and cleaned with isopropyl alcohol or Essence F.

Application on aluminium:
FRS40 metallic should be applied on a system composed of:
- Surface treatment (OAC type)
- Epoxy corrosion resistant primer (F69 type)

The primer should be dried for minimum 1 hour at 60°C (140°F) before applying the FRS40.

Recoating:
Before applying varnish, let FRS40 metallic dry 1 hour at room temperature.

All recommendations mentioned above are given for information.

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Instruction for Use

Spray Application (Mix Ratio)

	Weight
FRS40 Base	100 parts
FRS Hardener	10 parts
Thinner*	10 to 20 parts

* Thinner options: Thinner FRSL, Thinner P2-2 Fast, Thinner P6 Fast, Thinner P2

Ideally, the unmixed products should be stored between 18°C and 25°C (64°F and 77°F) for 24 hours before use.

Before using, it is recommended to homogenize the FRS40 metallic base as follows:
- Homogenization with a gyroscopic device 10min
- Verification / detachment of potential settling at the bottom of the can with a spatula.
- If settling is observed: homogenization once again with mechanical device 10min.
- Verification of sedimentation at the bottom of the can with a spatula.

- It is recommended to wait at least 30minutes after base homogenization before use to ensure viscosity stabilization.
- It is recommended to mix by weight
- Mix the base and hardener until the mixture is homogeneous. Then add thinner and mix.
- The mixing must be made at a temperature between 15°C and 35°C (60-95°F)

Note: it is recommended to sieve the diluted mixture using a 150-190 µm (6-8 mils) filter
P2-2 Fast and P6 fast thinners are designed for specific colors to shorter drying times therefore these thinners also reduce pot-life.

Induction Time

Not Applicable.

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

20 – 30 seconds AFNOR Cup #4
18 – 28 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.

Viscosity may differ according to the effect.
Viscosities mentioned above are corresponding to the recommended range of viscosity to ensure compliant application. The range of dilution must be used to adjust viscosity to reach the recommended one.
AFNOR 4 cup is the reference cup. The others are given for information purposes

Specific fine metallic effect:
4 metallic colors have been formulated to ensure fine metallic effect. Specific parameters are given in the table below.

Part Number	Thinner ratio recommended	AFNOR 4 Cup viscosity	Pot Life
40927222B	0	13s ± 3s	2h
40929311B	15	13s ± 3s	1h
40927369B	15	13s ± 3s	1h
40980927B	15	13s ± 3s	2h

N.B.: Dry Film thickness from 10 - 20 µm to 0.4 - 0.8 mils

3 Metallic colors are using specific thinners
40929529B -> Thinner P6 Fast is designed to avoid dry overspray and shorter drying times.
40928578B -> Thinner P2-2 Fast is designed to shorter drying times.
4092A542B -> Thinner P2-2 Fast is designed to shorter drying times.

Pot life (23ºC/73ºF)

Thinner FRSL or P2: 6 Hours
Thinner P2-2 fast: 3 Hours
Thinner P6 Fast: 1Hours30

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Dry Film Thickness (DFT)

30 – 50 µm
1.2 – 2 mils

Application Recommendations

Conditions

Temperature:	15 – 35 °C 59 – 95 °F
Relative Humidity:	20 – 80 %

Note

FRS40 Metallic may be applied in conditions outside of the limits shown above. Application must be done carefully to ensure a satisfactory result. Please contact your local AkzoNobel Aerospace Coatings representative to determine the appropriate application techniques when environmental conditions are 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	NA	1.2-1.6 mm	NA	1.5-3 bars[1]

[1]Dynamic Air Pressure at gun-inlet measured with an open trigger.

Number of Coats

Apply 1 crossed coat. Let dry 5 to 10 minutes at room temperature. Apply a 2nd crossed coat. Repeat the process to achieve the required effect and thickness.

Cleaning of Equipment

Clean the equipment with a suitable solvent, such as the thinners listed in this TDS

Note

The quality of the application of all coatings will be influenced by the spray equipment chosen and the temperature, humidity, and airflow of the paint application area. When applying the product for the first time, it is recommended to prepare test panels to optimize equipment settings to obtain the best coating appearance possible.

Physical Properties

Drying Times

	23°C/73°F	40°C/104°F	60°C/140°F
Dust Free	Thinner P2 - 15 min / Thinner P2-2 Fast - 15 min	N.A	N.A
Dry to Handle	Thinner P2 - 8h / Thinner P2-2 Fast - 1h30	N.A	Thinner P2 - 1h
Dry to Tape	Thinner P2-2 Fast - 2 to 4 h	Thinner P2-2 Fast - 1 to 2h	Thinner P2-2 Fast - 1h
Recoatable	Thinner P2 - 1 to 24 h / Thinner P2-2 Fast - 1 to 24 h	Thinner P2 - 30 min to 8h / Thinner P2-2 Fast - 30 min to 8h	Thinner P2 - 15 min to 8h / Thinner P2-2 Fast - 15 min to 8h
Full Cure	7 days	3 days	12 h

Note

Substrate surface temperature:
- Drying times have been determined using test pieces of a thickness <2mm and for 35 µm (1,4 mils) of dry film.
- Before forced-curing, it is recommended to let the FRS40 Metallic to dry 45 min to 1 hour at 23°C (73°F) depending on the film thickness for solvent evaporation.

The curing time depends on temperature, relative humidity and airflow.
Increased temperatures, low RH and efficient airflow can decrease the drying times significantly.

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Theoretical Coverage	Base and Hardener undiluted. Depends on color.
Dry Film Weight	1.5 - 2
Volatile Organic Compounds	Base and Hardener undiluted. 450 - 650 g/L (3,76 - 5,42 lobs/gal).
Gloss	Matt to Semi-Gloss.
Color	All color doable.

Flash Point

FRS40 Base	24 °C / 75.2 °F
FRS Hardener	37 °C / 98.6 °F
Thinner FRSL	29 °C / 84.2 °F
Thinner P2-2 Fast	41 °C / 105.8 °F
Thinner P6 Fast	122 °C / 251.6 °F
Thinner P2	32 °C / 89.6°F

Storage

Store the product dry and at a temperature between 5 – 35 ºC / 41 – 95 ºF per AkzoNobel Aerospace Coatings specification. Store in the original unopened containers. Refer to container label for specific storage life information.

Shelf life 5 - 35°C (41 - 95°F)

FRS40 Base	36 months
FRS Hardener	24 months
Thinner FRSL	48 months
Thinner P2-2 Fast	48 months
Thinner P6 Fast	48 months
Thinner P2	48 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: July 2025 (supersedes none) - FOR PROFESSIONAL USE ONLY

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