ALCHEMIX EP 596

Description

ALCHEMIX EP 596 is a low viscosity, corrosion resistant, epoxy laminating resin system. It is specifically formulated for use in demanding industrial applications such as heavy-duty corrosion protection, structural adhesives and civil engineering. ALCHEMIX EP 596 has a long working time, but will cure at low temperatures and in damp conditions, enabling it to be used in many different environments. Standard and fast cure hardeners are available and can be combined to give the desired cure speed.

Features

- Excellent low temperature cure
- Excellent cure in damp conditions
- Excellent chemical resistance

Mix Ratio

	EP 596	H596F	H596
By Weight	100	41	-
	100	-	61

Component Data

	Conditions	EP 596	H596F	H596
Description	-	Epoxy resin	Amine	Amine
Appearance	-	Yellow liquid	Green liquid	Red liquid
Viscosity	25°C	1100 – 1600 mPa.s	1000 – 1500 mPa.s	800 – 1100 mPa.s
Density	25°C	1.12 – 1.17 gcm^{-3}	1.00 – 1.05 gcm^{-3}	1.00 – 1.02 gcm^{-3}

Cure Data

	Conditions	Typical Value	
		EP 596 – H596F	EP 596 – H596
Mixed Density	25°C	1.09 – 1.14 gcm^{-3}	1.07 – 1.12 gcm^{-3}
Mixed Viscosity	25°C	1100 – 1600 mPa.s	850 – 1250 mPa.s
Pot Life	200g, 25°C	25 – 30 minutes	90 – 110 minutes
Cure Time[1]	200g, 25°C	16 – 24 hours	24 hours
Full Cure	25°C	7 days	7 days
Minimum Curing Temperature	-	15°C	15°C

[1] See “Curing and Post Cure” section below

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Cured Properties

	Standard	Typical Value[2]	
		EP 596 – H596F	EP 596 – H596
Hardness	ISO 868	82 – 87 D	82 – 87 D
Tensile Strength	ISO 527	10 – 15 MPa	45 – 50 MPa
Tensile Modulus	ISO 527	1150 – 1850 MPa	1350 – 1650 MPa
Elongation at Break	ISO 527	0.5 – 1.5 %	2.0 – 4.0 %
Flexural Strength	ISO 178	53 – 58 MPa	53 – 58 MPa
Flexural Modulus	ISO 178	1150 – 1850 MPa	1350 – 1650 MPa
Heat Distortion Temperature (HDT)	TMA	55 – 60 °C	62 – 67 °C
Glass Transition Temperature (Tg)	DMA	49 – 54 °C	52 – 57 °C

[2] Above values refer to pure resin, properties of the laminate will differ and will depend on the reinforcements used

Resin Preparation

Open both the Epoxy and Hardener containers and examine for any signs of crystallization. If crystallization has occurred, place the container in an oven at 50 – 60°C for approximately 2 hours, gently shaking the container every 30 minutes.

Ensure the two components are at between 15 – 25°C before use. Processing at lower temperatures will result in slower or incomplete cure.

Before use ensure that the resin, fibre or filler are compatible. For advice on the choice of gelcoat, please contact Alchemie Ltd.

Processing Instructions

Thoroughly mix the resin and the hardener according to the indicated mixing ratio, avoiding air entrapment and ensuring that the material at the bottom and sides of the container is well stirred into the centre. The mixing and processing operations should be completed within the pot life of the system. The reaction generates heat, do not leave large quantities (more than 25mm thick) to cure.

Cure and Post Cure

The system should be cured at ambient temperature. The cure rate is affected by temperature, curing at lower temperatures will result in slow, or incomplete cure.

The exact cure time will depend on the size and geometry of laminate and should be determined by customer testing. Thinner laminates will take longer to cure than thicker laminates. Incomplete cure can result in slight distortions or deformations of the laminate if forces are applied.

Post cure is not required for this product.

Shrinkage

Shrinkage will vary with each laminate design, as factors such as thickness and geometry can affect the degree of shrinkage. Generally speaking, large, thick laminates will have a greater degree of shrinkage than small, thinner laminates. Other factors, such as ambient temperature and resin temperature can also have an effect. Please contact Alchemie Ltd for more information.

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Storage

ALCHEMIX EP 596, HARDENER H596F and HARDENER H596 should be stored in original, unopened containers between 15 and 25°C. KEEP THE PACKING TIGHTLY SEALED WHEN NOT IN USE. If stored under the above conditions, ALCHEMIX EP 596, HARDENER H596F and HARDENER H596 will have a shelf life of 12 months, from the date of production.

Packaging

ALCHEMIX EP 596 is supplied in 25kg and 200kg containers.
HARDENER H596F and HARDENER H596 are supplied in 25kg and 200kg containers.
Please contact Alchemie Ltd for smaller pack sizes.

Further Information

This data is not to be used for specifications. Values listed are for typical properties and should not be considered minimum or maximum.

Our technical advice, whether verbal or in writing, is given in good faith, but without warranty. This also applies where proprietary rights of third parties are involved. It does not release you from the obligation to test the products supplied by us as to their suitability for the intended process and use.

Before using any of our products, users should familiarise themselves with the relevant Technical Data Sheet (TDS) and Safety Data Sheets (SDS) provided by Alchemie Ltd.

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