

Description

ALCHEMIX EP 5300 is an ambient temperature cure, flexible epoxy system, exhibiting outstanding mechanical properties. ALCHEMIX EP 5300 cures to give a tough, flexible system, it can be used as a casting resin, laminating resin or as a coating system.

Features

- Flexible
- Tough
- Low viscosity, easy to apply

Mix Ratio

	EP 5300	H5300
By Weight	100	145

Component Data

	Conditions	EP 5300	H5300
Description	-	Epoxy resin	Amine
Appearance	-	Clear liquid	Amber liquid
Viscosity	25°C	300 – 500 mPa.s	1000 – 2000 mPa.s
Density	25°C	1.10 – 1.15 gcm ⁻³	0.98 – 1.02 gcm ⁻³

Cure Data

	Conditions	Typical Value
Mixed Viscosity	25°C	500 – 1200 mPa.s
Mixed Density	25°C	1.02 – 1.08 gcm ⁻³
Pot Life	200g, 25°C	45 – 60 minutes
Cure Time	200g, 25°C	48 hours
Full Cure	25°C	7 days

Cured Properties

	Standard	Typical Value
Hardness	ISO 868	80 – 90 A
Tensile Strength	ISO 37	3.1 – 3.7 MPa
Elongation at Break	ISO 37	75 – 95 %
Tear Strength	ISO 34	21 – 27 kN/m
Coefficient of Thermal Expansion	TMA	18 – 22 x 10 ⁻⁵ K ⁻¹

Resin Preparation

Open both ALCHEMIX EP 5300 and HARDENER H5300 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 20 – 25°C before use. Processing at lower temperatures will result in slower or incomplete cure.

Ensure that substrates are clean and dry, and free from any contamination. Ensure that any mixing equipment is clean and dry and free from contamination

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.

Curing

The system should be cured at 25°C. The exact cure time will depend on the size and geometry of the casting and should be determined by customer testing. Thinner castings will take longer to cure than thicker castings, but generally, the product can be demoulded after 24 – 48 hours at 25°C. Incomplete

cure can result in slight distortions or deformations of the components if forces are applied.

To achieve optimum properties, the product should be post cured. We recommend the following step-wise post cure schedule: after curing at room temperature for 24 hours, heat for 1 hour at 40°C, 1 hour at 60°C, followed by 3 hours at 80°C before being allowed to cool naturally to room temperature. To prevent any distortion during the post cure cycle, ensure that the resin is fully supported. When post-curing is complete, let the unit cool down slowly to room temperature, preferably in the oven. Sudden change in temperature can cause distortion, warping or cracking.

Shrinkage

Shrinkage will vary with each casting design, as factors such as casting size and geometry can affect the degree of shrinkage. Generally speaking, large, thick castings will have a greater degree of shrinkage than small, thin castings. Other factors, such as substrate temperature and resin temperature can also have an effect. Post curing the part can also lead to a greater degree of shrinkage. Please contact Alchemie Ltd for more information.

Storage

ALCHEMIX EP 5300 and HARDENER H5300 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 5300 and HARDENER H5300 will have a shelf life of 12 months, from the date of production.

Packaging

ALCHEMIX EP 5300 is supplied in 1kg, 5kg, 25kg and 200kg containers.

HARDENER H5300 is supplied in 1.45kg, 7.25kg, 25kg and 200kg containers.

Please contact Alchemie Ltd for bulk supply.

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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