

Key Features

- 24 Hour Initial Cure Time
- Excellent Machinability
- Excellent Bond To Tooling Block
- Density Matches with EB700
- Can Gap Fill and Crack Repair

Product Description

EA700 is an epoxy paste adhesive developed to offer easy handling, reliable bonding and matched machining characteristics when bonding together one or more blocks of epoxy tooling board. It is capable of gap filling both between blocks and also as a crack or damage repair on existing machined tooling block.

To ensure the minimum possible bond-line witness after machining, EA700 has a similar density and machining behaviour to the board itself, along with similar HDT and CTE, all of which help to ensure almost seamless machining and finishing when producing patterns and moulds from multiple blocks of epoxy tooling board.

Recommended Uses

EA700 epoxy adhesive is ideally suited for bonding of epoxy tooling boards in the density range of 0.5 (500kg/m³) through to 0.9 (900kg/m³). It is especially suited to the bonding of our EB700 Epoxy Tooling Board, having very similar density, thermal behaviour and machining characteristics.

EA700 can also be used to fill gaps and cracks in epoxy tooling board and repair damaged sections or tool path errors prior to or after machining.

Properties

The table below shows the typical properties:

Property	Units/ Test Method	Result
Colour	-	Blue
Viscosity @ 25 °C	-	Thixotropic Paste
Density Resin @ 25 °C	g/cm ³	0.78
Density Hardener @ 25 °C	g/cm ³	1.07
Density Mixed @ 23 °C	g/cm ³	0.80
Pot Life @ 25 °C of 115g	mins	30
Cure Time @ 23 °C	Hours	24
Coefficient Linear Expansion	10 ⁻⁶ /K	45
Hardness @ 23 °C	Shore D ISO 868:1985	75
Hardness @ 80 °C	Shore D ISO 868:1985	69
Hardness @ 100 °C	Shore D ISO 868:1985	68
Hardness @ 120 °C	Shore D ISO 868:1985	65
Heat Distortion Temperature	°C	120

How to Use

Our EA700 is a chemical product for professional use. It is essential to read and understand the safety and technical information before use.

Follow the guidelines for safe use outlined in the SDS which include the use of appropriate hand and eye protection during mixing and use.

Mix Ratio

Mix Ratio 100:15 by Weight

EA700 Epoxy Adhesive should be mixed with its Hardener at a ratio of 100 parts of resin to 15 parts of hardener, by weight. Failure to follow the mixing ratio will result in a poor or only partial cure of the paste, greatly reduced mechanical properties and possibly other adverse effects. Under no circumstances add 'extra hardener' in an attempt to speed up the cure time; epoxies do not work in this way.

Mixing Instructions

Only weigh out and mix as much resin as you can use within the pot life.

Weigh or measure the exact correct ratio of resin and hardener into a straight sided container. Using a suitable mixing stick begin to mix the resin and hardener together to combine them completely.

Spend at least one minute mixing the resin and hardener together, paying particular attention to the sides and base of the container. Remember: Any resin that has not been thoroughly combined with the hardener will not cure.

Once you have finished mixing in one container, it is good practice to transfer the mixed resin into a second container and undertake further mixing of the resin using a new mixing stick. Doing so will eliminate the risk of accidentally using unmixed resin from the bottom or sides of the container.

Pot-Life / Cure Time / Post Cure

Transfer the resin from the mixing pot onto the tooling block as soon as possible to extend the working time and avoid the risk of uncontrollable rapid cure in the mixing pot.

As with all epoxies, the pot-life/working time will vary significantly depending on the ambient temperature, the starting temperature of the resin and hardener and the amount of resin mixed.

Our EA700 can be used in ambient temperatures between 15°C (59°F) and 30°C (86°F). For best results, an ambient temperature of at least 20°C (68°F) is recommended.

The pot life at 25°C is 30 minutes. Ensure you have applied the bonding paste within this time. The pot life can vary depending on amount mixed and ambient temperature so take this into consideration as you use the product.

The typical cure time at 23°C is 24 hours. At this point, the bonding paste should be hard and can be sanded or shaped as necessary.

Where the tooling block is to be used at elevated temperature, then a post cure should be conducted to ensure the EA700 achieves its full HDT. The recommended post cure cycle is as follows:

- 24hrs at 23°C
- 4hrs at 80°C
- 4hrs at 120°C

Once the block has cooled back to ambient temperature, it is ready for use.

Transport and Storage

EA700 should be stored in its original container and out of direct sunlight. It is recommended that the storage temperature should be between 15°C and 25°C. Ideally, containers should be opened only immediately prior to use.

KEEP THE PACKING TIGHTLY SEALED WHEN NOT IN USE. When stored correctly, the resin will have a shelf-life of 12 months and the hardener 24 months. Although it may be possible to use the resin and hardener after a longer period, a deterioration in the performance of the resin will occur.

Disclaimer

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

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