



Casting System 100mm

Highly UV-resistant epoxy casting-system

Epoxy resin systems are very popular for transparent, decorative, large volume moldings & castings due to their solvent-free nature and ability to cast in high layer thicknesses.

To prevent yellowing, embrittlement and chalking caused by UV-light, which are common for epoxy, we have developed this special, room-temperature and heat-curable system with a crystal- or lead-glass-like appearance.

The resin

- is a low-viscous, reaction-inhibited epoxy resin

The hardener

- is a reaction-inhibited, phenol-free amine-hardener

Due to the perfectly coordinated reaction and self-venting behavior, layer thicknesses of up to 100 mm can be cast in one operation at max. 20°C material & room temperature. Nevertheless, comparably short curing times allow early overpouring or further mechanical processing.

If required, mineral fillers as well as lightweight fillers can be added without any problem. Depending on the type of filler, the pot life, processing time and also the curing time may be extended or shortened.

Before manufacturing an original object, we recommend clarifying the suitability of the materials according to the intended use by means of a prototype and thus also getting Know-How on the product properties.

Product specification

- transparent 2-component-epoxysystem
- low viscosity, reduced exothermic temperature
- solventfree, phenol-free, free from benzyl alcohol
- very good wetting- and de-aeration-properties
- 100 mm casting-thickness per layer possible (at max. 20°C material- & roomtemperature)
- casting thickness of 10 - 40 mm also realizable at 35°C
- after appropriate pre-curing, e.g. 3 days at 23°C, heat curing up to 60°C is also possible
- impact & scratch resistant, high glossy surface
- repeatedly excellently grind- and polishable
- good chemical resistances & mechanical properties

Properties of resin

	Casting System 100mm	remarks
Density [g/cm ³]	1,00 - 1,20	20°C
Viscosity [mPas]	450 - 750	25°C
Appearance	slightly bluish-violet	
Storage [°C]	+20 to +25°C	

Properties of hardener

	Casting System 100mm	remarks
Density [g/cm ³]	0,887 - 1,087	20°C
Viscosity [mPas]	70 - 140	25°C
Appearance	colourless to slightly yellowish	
Storage [°C]	+20 to +25°C	

Properties of system

	Casting System 100mm	Casting System 100mm	remarks
Mixing ratio	100	35	by weight
	100 ml	40 ml	by volume at 20°C
Viscosity [mPas]	150 - 550		25°C
The specified mixing ratio must be observed as accurately as possible. Deviations cause an unbalanced curing process with possibly unsatisfactory results.			

Consumption

Casting-system	approx. 1,10 - 1,15 kg per litre volume
	approx. 1,10 - 1,15 kg per m ² for a layer-thickness of 1 mm

Application

Casting System 100mm			remarks
Material-temperature	[°C]	18 - 25	Please note The processing temperature is directly related to the layer thickness
Ambient temperature	[°C]	18 - 25	
Substrate temperature	[°C]	18 - 25	
Rel. air humidity	[%]	< 85	
Room, material and/or object temperatures higher than 20°C may cause heat tinting (yellowing) and/or bubble formation due to overheating during the curing process. A corresponding reduction in layer thickness per casting-process is required.			
Potlife (200 g mixture / 20°C)	[h]	> 6	materialtemperature 20°C
Max. exothermic development taken from potlife-test	[°C]	~ 40	at 20°C starting-temperature
Please make absolutely sure that the resin in the storage container / mixing vessel is totally transparent! Otherwise see storage / regeneration			
Casting Ø 250 x 90 mm (without inlays)			
De-aerations time in the mixing-vessel 6,75 kg mixture / 20°C	[minutes]	10 - 15	Larger quantities, higher liquid levels or higher temperatures result in a shorter pot life and must therefore be poured earlier or the preparation quantity must be reduced.
Max. exothermic temperature of casting Ø 250 x 90 mm, Polyethylene-mould, not isolated (with higher thermal insulation values, higher temperature development is to be expected)	[°C]	~ 65 after 21 hours	starting-temperature 20°C
Surface hardness Hardness tester Kern/Sauter HBD 100-0, cone 30°, Testparameters: 5 kg compression-load 15 seconds (similar to DIN ISO 7619-1)	[Shore D, ± 2]	consistency like soft-rubber	after 24 h / 20°C
		22 (rubbery)	after 48 h / 20°C
		45	after 3 days / 20°C
		68	after 4 days / 20°C
		70	after 5 days / 23°C
		72	after 7 days / 23°C
		76	after 14 days / 23°C

Casting Ø 250 x 90 mm (cont.)			
ability to pour over after	[d]	approx. 3 - 4 / 20°C	
demoldable (depends on inlays and design)	[d]	after 4 - 5 / 20°C	at shore-D-hardness of 68 to 70
mechanically workable after	[d]	5 - 7	at 23°C
thermally resistance	[°C]	~ 40°C	after 3 - 4 weeks/23°C
<p>Lower layer thicknesses and / or lower curing temperatures provoke longer curing times and slower increase of the surface hardness. The values given are average results and may vary depending on the processing method and curing conditions. It is essential to protect surfaces from moisture (dew, condensation water), dust etc. during the curing time. **Longer cured surfaces must be sanded to ensure optimum adhesion properties before over-coating.</p>			

Packing (2-component-pack)

Casting System 100mm (Resin)	1 kg	2kg	5 kg	20 kg
Casting System 100mm (Hardener)	350 g	700 g	1,75 kg	7 kg

Storage

Store at dry condition at +20°C to +25°C. Shelf life is one year when stored in original closed containers. Keep packages tightly closed after withdrawal.

The resin is sensitive to cold storage and/or transport temperatures below +20°C. Fogging and highly visible turbidity up to crystallization may occur. Please check the resin before processing if totally transparent.

Regeneration without loss of quality can be achieved by heat treatment. Regenerate the resin ideally at approx. +55°C in the delivered packing over a period of 24 hours. Open the cap slightly to allow pressure equalization. After the cooling down to room-temperature work with the resin as usual.

The hardener tends to carbamate under the influence of oxygen and/or high humidity. Crystallized hardener is not regenerable. The hardener must be disposed in a safe way. Always close can well after use.

Safety advises

epoxy-resins and -hardeners are rated & labelled according to REACH-, CLP/GHS-regulations. Please note the danger-signs and safety-advises on the product-label and the statements in the relevant material-safety-data-sheet (MSDS).

Disposal of product residues and containers

Liquid materials and containers have to be disposed in a safe way (hazardous waste) - observe local regulations. Avoid subsoil penetration. Prevent product from entering drains.

All information complies with our current state of knowledge and experience. Technical data are average values, determined under lab-usual conditions, which represent no warranty of fitness for a special purpose and constitute no legal relationship. The technical data do not correlate compulsively with results determined at the finished part. The user is responsible to ensure the required results regarding the intended application purpose. Our information does not relieve the user from the obligation to implement application-, performance and load-tests (mechanical & chemical) in view to the practical suitability of the manufactured part.

Manufacturing methods and raw materials are adjusted to the current state of the technology continuously, respectively to statutory toxicological regulations.

Compliance with national and local regulatory requirements in connection with the use and processing of these products is solely in the user's responsibility.

Furthermore, our general sales- & delivery conditions are valid in any case.