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LAMINATING EPOXY RESIN EC 54 WITH HARDENER K 12

DESCRIPTION:

Two component epoxy system without fillers rather fluid. High dimensional stability.

APPLICATION:

Matrices, ceramic cases, molds, foundry patterns and tools, copy models, gauges, pressing tools, laminates, mold and model core.

PROCESSING:

Manual laminating by roller and manual applications with or without a vacuum bag for glass. Packaging / capping of a mixture filled with mineral and/or metal powders (manual mixing or mechanical mixing with kneader). Curing at room temperature.

SYSTEM SPECIFICATIONS:

Resin EC 54	
✓ Viscosity at 25°C	1350-1750 mPas
✓ Color	pale yellow
✓ Density at 25°C	1.14-1.16 g/ml
Harder K 12	
✓ Viscosity at 25°C	150-250 mPas
✓ Color	Colorless
✓ Density at 25°C	0.99-1.01 g/ml

CHARACTERISTICS OF THE TYPICAL SYSTEM:

Processing Data:	
✓ Mixing ratio by weight	100:20
✓ Mixing ratio in volume	100:22.5
✓ Potlife at 25°C (40mm; 100ml)	23-35 min
✓ Exothermic peak at 25°C (40mm; 100ml)	130-140°C
✓ Initial viscosity of the mixture at 25°C	650-1250 mPas
✓ Gelling time at 25°C (15ml; 6mm)	120-180 min
✓ De-deformation time at 25°C (15ml; 6mm)	8-10 hrs
✓ Post-treatment at 60°C	(10-15 hrs)
✓ Maximum recommended thickness	5 mm

TYPICALLY CURED SYSTEM PROPERTIES:

Properties determined on cured samples: 24 h KT (room temperature) + 15 h 60°C

✓ Color	pale yellow
✓ Density at 25°C	1.09-1.11 g/ml
✓ Hardness at 25°C	86-88 shore D/15
✓ Glass Transition(Tg)	57-62°C
✓ Max Tg(3h 80°C)	63-66°C
✓ Linear shrinkage	0.8-1.0 %
✓ Water absorption (24 hrs KT)	0.15-0.25%
✓ Water absorption (2 h 100°C)	0.85-1.05%
✓ Linear thermal expansion (Tg - 10°C)	75-80 10 ⁻⁶ /°C
✓ Linear thermal expansion (Tg + 10 °C)	190-200 10 ⁻⁶ /°C
✓ Maximum recommended processing temperature	60°C
✓ Bending strength	75-85 MN/m ²
✓ Max voltage	4-7%



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✓ Stress to fracture	6-10%
✓ Bending elastic mode	2000-2500 MN/m ²
✓ Tensile strength	52-60 MN/m ²
✓ Elongation to break	5-7%
✓ Compressive strength	65-75 MN/m ²

INSTRUCTIONS:

Homogenize the components before use. Add the correct amount of hardener to the resin, mix carefully. Avoid air entrapment. For surface preparation (mould or model) refer to the data sheet of the release agents.

CURING / POST TREATMENT:

Post-treatment is always advisable for room temperature curing systems to stabilize the components and achieve the best properties. It is necessary when the part is working at high temperature. Allow the tool to cure as shown in the table, and gradually increase the temperature by 10°C / hour. Let it cool down slowly. The heating rate and the indicated time after curing are based on the standard sample size. Users should evaluate the best conditions for curing or post-curing depending on the component size and shape. For large components, reduce the thermal gradient and extend the curing time. In the case of thin film applications and composites, post-cure on the mold.

BEWARE:

Epoxy resins and their hardeners can be stored for two years in their original sealed containers in a cool, dry place. The hardeners are moisture sensitive, so it is good practice to close the container immediately after each use.

TREATMENT PRECAUTIONS:

Consult the data sheet and observe the regulations on industrial health and waste disposal.