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FLEXIBLE TRANSPARENT CASTING EPOXY EC 251 WITH HARDENER W242

DESCRIPTION:

Two components epoxy system, flexible, colourless, transparent. The system is based on a low viscous, unfilled resin and an amine hardener. Long shelf life. Low exothermic peak, allows the casting of fairly large objects. The suitability of the system for the preparation of casted transparent objects where different materials are bonded together must be determined based on the applications. Good resistance to UV. However, prolonged exposure to UV causes yellowing of the material. Max. Recommended operating temperature for electrical and electronic applications 110°C. Max. Recommended operating temperature for structural applications (prototyping, articles), to be verified based on applications. The system complies with the RoHS directive (European Directive 2002/95 / EC) and the new RoHS directive 2011/65 / EU (RoHS 2) came into force on 21st July 2011 and requires the member states to transpose the provisions into their respective national legislation by 2nd January 2013.

APPLICATION:

Transparent encapsulations of decorative items, electrical and electronic components, prototypes and pre-series for demonstration.

PROCESSING:

Impregnation. Manual casting. Vacuum casting. Manual and/or automatic casting. Curing at room temperature. Maximum recommended thickness: 10 mm

SYSTEM SPECIFICATIONS:

Resin EC 251

✓ Viscosity at 25°C	300-40 mPas
✓ Color	colorless
✓ Density at 25°C	1.10-1.14 g/ml

Harder W 242

✓ Viscosity at 25°C	250-350 mPas
✓ Color	Colorless
✓ Density at 25°C	0.98-1.02 g/ml

CHARACTERISTICS OF THE TYPICAL SYSTEM:

Processing Data:

✓ Mixing ratio by weight	100:40
✓ Mixing ratio in volume	100:45
✓ Potlife at 25°C (3,000 mPas)	40-50 min
✓ Potlife at 25°C (40mm, 100ml)	30-40 min
✓ Exothermic peak at 25°C (40mm, 100ml)	50-60°C
✓ Initial viscosity of the mixture at 25°C	200-300 mPas
✓ Gelling time at 25°C (15ml; 6mm)	2.5-3.5 u
✓ De-formation time at 25°C (15ml; 6mm)	24-36 u
✓ Aftertreatment at 60°C	(15 h)
✓ Maximum recommended thickness	10 mm

TYPICALLY CURED SYSTEM PROPERTIES:

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

✓ Color	colorless
✓ Density at 25°C	1.07-1.11 g/ml
✓ Hardness at 25°C	72-80 shore D/15
✓ Load Transition (Tg)	-11 -5 °C



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✓ Water absorption (24 h KT)	0.15-0.25 %
✓ Water absorption (2h 100°C)	0.95-1.15
✓ Linear thermal expansion (Tg -10°C)	100-110 10 ⁻⁶ /°C
✓ Linear thermal expansion (Tg +10°C)	185-205 10 ⁻⁶ /°C

INSTRUCTIONS:

Add the correct amount of hardener to the resin, mix carefully. Avoid air entrapment. For some applications, it may be helpful to preheat the components and/or perform a venting step under vacuum of the mixture before pouring.

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 one year in the 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.