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https://www.apraktika.hu/en/epoxy-jewellery-resin

Epoxy Casting Resin: Technical Data Sheet

This epoxy resin has a high degree of UV resistance. It has two components. The base resin is a clear, unfilled, dilute liquid that cures with an "amine" hardener.

Epoxy is a thermosetting plastic. It can be permanently loaded up to 110 ° C.

The resin can also be used to coat the surface of a wide variety of materials, wood, ceramic, plastic, porcelain, metals.

It is also used by makers to encapsulate electronic components.

Characteristics:

- Crystal Clear
- High hardness, scratch resistant
- UV resistant
- Zero shrinkage during curing
- Well spread, low-viscous, easy to cast

1. Main Fields of Application

- Jewellery making. For casting jewellery stones and inserts.
- Bracelet making.
- Aesthetic, glossy, scratch-resistant coating of surfaces.

2. Instructions for use

1. Prepare the two components (base and hardener), shake separately or mix thoroughly before use.

2. Let the components have a rest so as the bubbles disappear after mixing.

3. Weigh out the required base and catalyst (e.g. 100 g base and 45 g hardener).
   Caution! Epoxy resins are sensitive to accurate mixing ratios.
   Otherwise it might not harden properly.

4. Place the components in a bowl and mix thoroughly. Use mixing bowl made of polypropylene or polyethylene, the epoxy does not react or even stick to that at all.
   Do not leave unmixed components on the wall of the mixing bowl.

5. The resin can then be casted. We recommend the mixture to be degassed in a vacuum chamber before.
   Advice: Try pouring it into a single point of the mould. This way you will avoid arising air bubbles.

The working time (pot time) at ~ 25 ° C is 70-80 minutes. (See table below.)

The epoxy resin sticks together very well even if you set to a completely hardened part later.

However, when casting jewellery, this should be avoided because the boundary line will always be visible. The light refraction is different from the parts as you'll never be able to establish exactly the same mixture density.

The hardening time is 36-48 hours or 18-24 hours after you start mixing the components. This time can be slightly reduced by raising either the casting temperature or the environmental temperature. E.g. to 35-40 ° C.

You can then disassemble the tool.

If necessary, use compressed air to facilitate separation. It is important not to force the separation with sharp tools, as this may damage the casted part.

The hardness and certain technical properties of the object can be further enhanced by heat treatment.

To do so, leave the object at room temperature for a minimum of 1 day.

Then heat them at 60 ° C for 15 hours. A well-controlled oven is a good option for that.

Be sure to raise the temperature slowly and gradually to 60 °C. About 6-8 °C per hour.

3. Important Recommendations

- Observe the general health and safety regulations
- Wear protective gloves
- Ensure adequate ventilation
- Wear safety goggles and suitable safe clothing

4. Chemical and Physical Properties

	normal	accelerated
Mixing ratio (mass %)	100:45	100:45
Mixing ratio (volume %)	100:50	100:50
Coulor	Crystal clear	Crystal clear
Viscosity	250 mPas	250 mPas
Mixing time, at 25 °C	1 min	1 min
Working time (pot life) at 25 °C	80 min	40 min
Gel time (15ml; 6mm)	10-12 h	5-10 h
Curing time at 25 °C	36-48 h	18-24 h
Hardness at 25 °C	80-85 Shore D/15	80-85 Shore D/15
Density at 25 °C	1,1 g/cm^3	1,1 g/cm^3
Flexural strength	90 MN/m^2	80 MN/m^2
Flexural elasticity modulus	2900 MN/m^2	2200 MN/m^2
Tensile strength	55 MN/m^2	42 MN/m^2

5. Shelf Life

The epoxy casting resin is guaranteed for a period of 18 months if you store them appropriately at a temperature of between 5°- 27°C (41° - 80°F).

The advice given verbally, in writing or through demonstrations on the use of the products are based on our knowledge.

The use and application of the product by the user lie beyond the control of the company and are therefore the user's own responsibility.