Technical Data Sheet

Properties:

AKEMI® Laminating & Repair Resin is a mixture of unsaturated polyester resins dissolved in styrene. The product is characterized by the following properties:

- highly liquid, thus good perfusion of glass fiber products
- fast hardening (30 - 40 minutes)
- very good adhesion to plastics (polyester, rigid PVC), wood, stone even at higher temperatures (up to approx. 100°C)
- the laminates have a high mechanical strength and high shatter resistance
- resistant against water, petrol and mineral oils as well as diluted alkalis and acids

Application Area:

AKEMI® Laminating & Repair Resin is used to make laminates and moulded objects. In addition, it is implemented for reinforcing containers (hand lay-up technique) in combination with glass-fiber fabric or glass-fiber mats. It can also be used to carry out repair work on glass-fiber reinforced plastic parts (boats, caravans, motor vehicles) and to enclose small objects.

Instructions for Use:

1. The surface to be applied to must be dry, free of grease and oil and slightly roughened. Old coats of paint which have not hardened or thermoplastic acrylic paint must be removed.
2. Surfaces of moulds should be treated with a release agent, preferably a spray on the basis of silicone or wax.
3. The glass-fiber mats or fabric required for the work at hand are to be cut to the correct size first.
4. Add 1 - 4 g of hardener paste white to 100 g of resin (1 g of hardener corresponds to 4 - 5 cm of paste when squeezed out of the screw-top tube).
5. The two components are thoroughly mixed until a homogeneous shade of colour is attained. The mixture remains workable for approx. 4 - 14 minutes.
6. a) When working with moulds, the glass fiber mat or fabric is inserted first (if more than one piece is to be used, overlap them and make sure the transition is smooth), then the prepared resin mixture should be dabbed on with a brush (small surfaces) or carefully spread over the whole surface with a spatula (large surfaces).
   b) If containers are to be reinforced, apply the resin mixture to the surface which is to be reinforced and then continue as described above for the moulds.
7. Use a laminating roller, preferably one made of teflon, to improve perfusion and to remove any air bubbles.
8. Then you can add further layers of glass-fiber mat or fabric wet-on-wet, as required.
9. After 30 - 40 minutes the parts have hardened to such a degree that they can be further processed (abraded, milled or holes drilled) or transported.
10. Moulded objects which have been made in this way can be glued together using AKEMI® Poly-Glass Filler.
11. Warmth accelerates the hardening reaction and the cold delays it.
12. Tools can be cleaned with AKEMI® Nitro Dilution.

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Special Notes:

- Use AKEMI® Liquid Glove to protect your hands.
- If more than 4% of hardener is used, it will reduce the quality of the finished product and surface drying may be negatively affected.
- If less than 1% of hardener is used, hardening will be delayed. At low temperatures hardening will be incomplete and the surface will remain very sticky.
- If you are doing laminating work which requires several layers, use glass-fiber mat and glass-fiber fabric alternatively or work wet-on-wet to avoid the risk of delaminating.
- If glass-fiber veil is used, a very homogeneous surface texture can be achieved.
- Parts which are to come into contact with foodstuffs should first be allowed to harden at room temperature and then be left for another two hours at 60 - 70°C.
- If larger blocks are casted, they should be build up in several thin layers and a low amount of hardener should be used. This prevents thermal tension and subsequent cracking.
- Hardened resin can no longer be removed with solvents. This can only be achieved mechanically or using high temperatures (>200°C).
- If properly worked, the hardened resin is not dangerous to health.

Technical Data:

Colour:	yellow transparent
Density:	approx. 1.12 g/cm³
Viscosity:	900 – 1300 mPas
Working time/min.:	
a) at 20°C	
1% of hardener	12 – 14
2% of hardener	6 – 8
3% of hardener	5 – 6
4% of hardener	4 – 5
b) with 2% of hardener	
at 10°C	13 – 16
at 20°C	6 – 8
at 30°C	4 – 5
Material consumption with AKEMI glass fiber products:	
a) glass-fiber mat 300 g/m²:	900 – 1200 g/m²
b) glass-fiber fabric 240 g/m²:	300 – 500 g/m²
c) glass-fiber veil 40 g/m²:	600 – 800 g/m²
Mechanical properties:	
Bending strength DIN 53452:	110 N/mm²
Tensile strength DIN 53455:	60 N/mm²
E-module DIN 53457:	approx. 3500 N/mm²
Volume shrinkage:	7 – 8 %
Water absorption (30x50x50mm) DIN 53495:	approx. 0.34% by weight in 24 hrs

Storage:

If stored in dry and cool condition (5-25°C/41-77°F) in its closed original container at least 12 months from production.

Health & Safety:

Read Safety Data Sheet before handling or using this product.

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Important Notice:

The above information is based on the latest stage of development and application technology. Due to a multiplicity of different influencing factors, this information – as well as other oral or written technical advises – must be considered as non-binding hints. The user is obliged in each particular case to conduct performance tests, including but not limited to trails of the product, in an inconspicuous area or fabrication of a sample piece.

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