Technical Data Sheet

Properties:

AKEPOX® 5000 is a liquid, solvent-free, two-component adhesive based on an epoxy resin containing a cycloaliphatic polyamine hardener. The product characterized by the following properties:

- very neutral colour
- very low tendency to yellowing
- very low shrinkage during hardening, therefore minimal tension within the bonding layer
- weather-resistant bondings
- can be excellently coloured with AKEPOX® colouring pastes or concentrates
- the bonding layer retains its form well
- low tendency to fatigue
- very high stability towards alkalis and is therefore very suitable for bondings with concrete
- free of solvents, therefore it is especially suitable for bonding materials which are impermeable to gas
- suitable for bonding load-bearing constructional elements
- excellent laminating resin for making of sandwich parts
- adheres well to stone even if it is slightly damp
- suitable for bonding materials which react in contact with solvents (e.g. polystyrene, ABS)

Application Area:

AKEPOX® 5000 is mainly used in the stone-working industry for the weather-resistant bonding and gluing of natural stone (marble, granite), Techno Ceramics as well as artificial stone or building materials (terrazzo, concrete). By means of the application of high-quality raw materials it was possible to develop a system which hardly yellows. It is thus possible to use it in combination with light-coloured or even white natural stone without the usual intensive yellowing of conventional epoxy-resin systems. The low viscous consistency enables very thin adhesive joints. In combination with spun glass fabrics even lamination can be done. Other materials can also be glued with AKEPOX® 5000, e.g. plastics (hard PVC, polyester, polystyrene, ABS, polycarbonates), paper, wood, glass and many other materials. AKEPOX® 5000 is not suitable for the gluing of polyolefin (polyethylene, polypropylene), silicones, hydrocarbon fluorides (teflon), soft PVC, soft polyurethane, butyl rubber and metal.

Instructions for Use:

1. Thoroughly clean and slightly roughen surfaces to be bonded.
2. Two parts by weight or volume of Component A are to be thoroughly mixed with one part by weight or volume of Component B until a homogeneous shade of colour is achieved.
3. AKEPOX® colouring pastes or colouring tints can be used for colouring if required (max. 5%).
4. The mixture remains workable for approx. 20 to 30 minutes (20°C). After 6-8 hours (20°C) the bonded parts may be moved, after 12-16 hours (20°C) approx. they may be further processed. Max stability after 7 days (20°C).
5. Tools can be cleaned with AKEMI® Nitro Thinner.
6. Warmth accelerates and cold retards the hardening process.

Special Notes:

- The optimal mechanical and chemical properties can only be attained by adhering to the exact mixing proportions; excess adhesive or hardener has the effect of a plasticizer.

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- Use separate vessels when component A and B are being extracted from their containers.
- The resin is no longer to be used if it has already thickened or is jellying.
- The product is not to be used at temperatures below 10°C because it will not sufficiently harden.
- At constant temperatures above 50°C the hardened adhesive tends to yellow.
- The hardened resin can no longer be removed by means of solvents. This can only be achieved mechanically or by applying higher temperatures (> 200°C).
- Component A slightly tends to crystallize (honey effect). The product can be made workable again by warming it up.
- The stability of the bonding is highly dependent upon the natural stone which is to be bonded: silicate-bound stones react better than carbonate-bound stones.

Technical Data:

1. Colour:
   comp. A: colourless to slightly yellow transparent
   comp. B: colourless to slightly yellow transparent

2. Density:
   comp. A: approx. 1.15 g/cm³
   comp. B: approx. 1.10 g/cm³

3. Working time:
   a) mixture of 100 g component A + 50 g of component B:
   at 10°C: 60 – 70 minutes
   at 20°C: 20 – 30 minutes
   at 30°C: 15 - 20 minutes
   at 40°C: 5 – 10 minutes

   b) at 20°C and varying amounts:

20 g comp. A + 10 g comp. B:	35 – 45 minutes
50 g comp. A + 25 g comp. B:	25 – 35 minutes
100 g comp. A + 50 g comp. B:	20 – 30 minutes
300 g comp. A + 150 g comp. B:	15 – 25 minutes

4. Hardening process (shore D-hardness) of a 2 mm layer at 20°C:

3 hrs	4 hrs	5 hrs	6 hrs	7 hrs	8 hrs	24 hrs
--	30	51	67	74	76	81

5. Mechanical properties:

Bending strength DIN EN ISO 178:	60 – 70 N/mm²
Tensile strength DIN EN ISO 527:	30 – 40 N/mm²

6. Chemical resistance:

Water absorption DIN 53495:	< 0.5%
Sodium chloride solution 10%:	stable
Salt water:	stable
Ammonium 10%:	stable
Soda lye 10%:	stable
Hydrochloric acid 10%:	stable
Acetic acid 10%:	conditionally stable
Formic acid 10%:	conditionally stable
Petrol:	stable
Diesel oil:	stable
Lubricating oil:	stable

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Storage: 2 years approx. under cool conditions in the firmly closed original container.

Health & Safety: Read Material Safety Data Sheet before handling or using this product.

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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