

PLUS SCHNELLFEST 2K-EPOXY 5 MINUTES

SOLVENT-FREE TWO-COMPONENT ADHESIVE BASED ON EPOXY RESIN

UHU



- transparent after curing
- shock-resistant
- resistant to age and humidity
- mixing ratio: 1 : 1 (by volume)
- working time (open time) up to 5 minutes; initial strength after approx. 20 minutes

PREPARATION

Working conditions: Application time (period of usability):

The open time depends on the quantity used and the ambient temperature. For a quantity of 3 to 5g, the mix can be worked for up to 5 minutes; for a quantity of 20g, the working life is about 3 minutes.

Hardening:

At room temperature UHU plus schnellfest hardens so that the join is firm within 25 to 30 Minutes at the most; after 60 minutes approximately half the final bond strength is reached, and after 72 hours the final bond strength is reached.

The application of heat speeds up the hardening process.

Conditions for hardening:

Temperature Minimum hardening time

- + 5°C; 2 hours
- + 10°C; 90 minutes
- + 20°C; 60 minutes
- + 25°C; 30 minutes

Surface requirements: Preliminary treatment of various materials:

Metals: It is worth roughening the surface with abrasive cloth; the part must always be thoroughly degreased using solvent.

Glass, porcelain and similar materials should be degreased using solvent.

Wood only needs to be free of dust, grease and oil on the surface.

Hardened plastics (duroplasts) such as Bakelite® and melamine, resorcin, polyester and epoxy resins should be roughened with an abrasive cloth (abrasive rating 100) and degreased as above.

UHU plus schnellfest is not suitable for use with thermoplastic plastics such as polyethylene, polypropylene, polystyrene and soft PVC as they provide a poor basis for bonding.

Preliminary surface treatment: Preliminary treatment of surfaces to be stuck together.

The surfaces to be stuck together must be cleaned very thoroughly before the adhesive is applied. It is worth first using abrasive cloth (abrasive rating 150-200) then degreasing using cellulose moistened with a grease solvent such as acetone or nitro thinners. Special preliminary treatments to achieve the best possible bond strengths are described in DIN Regulation 53281 (Sheet 1). (This may be obtained from Beuth-Verlag GmbH in Berlin.)

Tools: For mixing it is best to use a plastic cup (in polyethylene, for example) or an unwaxed paper cup. Alternatively, small quantities may be mixed on a glass plate or something similar, using a wooden or metal spatula. Mixing should continue until the paste is of an even colour and the components are thoroughly combined.

As soon as possible after mixing, the paste should be applied to the surfaces to be stuck together in order to achieve the best possible bond. The adhesive is applied using a wooden or metal spatula, or a short-haired brush. For large areas, a fine-toothed spatula should be used as this ensures an even application. For use in mass production, we will be pleased to point out manufactures of

PRODUCT DESCRIPTION

Solvent free 2-component epoxy resin adhesive for quick and strong bonding. Working time up to 5 minutes, initial strength achieved after 20 minutes. Becomes transparent when hardened. Resistant to age and humidity.

FIELD OF APPLICATION

Glues metal, glass, procelain, ceramic, wood, marble, stone, concrete, thermosets, glass fiber reinforced plastics, hard-pvc, rubber, Styrofoam® and more. Not suitable for large glass surfaces, PE, PP styrofoam and soft PVC.

PROPERTIES

After the two components have been mixed, UHU plus schnellfest hardens to form a duroplastic synthetic resin. The parts to be assembled usually need to be fixed under pressure. It is not necessary to apply extreme pressure. Hardening takes place by evaporation. At temperatures below room temperature, the hardening process takes somewhat longer.

Possibility of modifying the product:

It is possible to modify UHU plus schnellfest by adding fillers.

Adding ground wood or sawdust produces a wood-like mass for application using a spatula or for modelling, on which woodworking tools can be used.

Adding ground aluminium produces a filler material with the appearance of metal. If the adhesive needs to be coloured, colour pigments or colorants may be added to the mixture. Almost any grease- and oil-free colour powder is suitable for this.

A hard material similar to stone can be produced by mixing ground quartz, fine sand, talc, chalk or kaolin to the mixture

- solvent free 2-component epoxy resin adhesive
- for particularly quick and strong bonding

Note: This information is the result of carefully executed tests. This Technical Data Sheet has been prepared to the best of our knowledge to provide you with advice when gluing. We cannot be held responsible for the results or any damage suffered, as the variety of factors involved (type and combination of materials and working method) are beyond our control. Users have to carry out their own checks and trials. Liability can only be accepted for the consistently high quality of our product.

dosing, mixing and processing machinery.

APPLICATION

Mixture ratio: (by volume) 1:1 (other mixing ratios possible)

Directions for use:

Mixing Ratio (binder and hardener, by volume) 1:1 = mixing ratio (by weight)

100:100

Hardening at room temperature

Conditions for hardening:

Temperature - Minimum hardening time

+ 5°C 2 hours

+10°C 90 minutes

+20°C 60 minutes

+25°C 30 minutes Measuring and mixing:

The mixing ratio of the two components is 1:1 by volume or by weight, i.e. equal quantities of binder and hardener. After the parts to be stuck together have been prepared, the adhesive is dosed in the given ratio. Small variations in the proportions of binder and hardener make virtually no difference. Thorough mixing is essential for good bonding and even joins.

For mixing, use the bowl provided in the packaging. A clean glass plate, grease-free cardboard or similar may also be used for mixing, using a spatula.

The adhesive should be very thoroughly mixed. The adhesive should be applied to the parts to be stuck together as soon as possible after mixing to ensure the best possible bond. The adhesive is applied using the spatula or a short-haired brush.

Open time: 5 mins. (Period of usability at 20°C room temperature)

Stains/residue: Cleaning:

Traces of adhesive should be removed and apparatus should be cleaned before the adhesive has hardened – acetone and nitro thinners are suitable solvents for this. The same applies to soiled clothing.

Once it has hardened, the adhesive can only be removed by using the solvent methylene chloride (dichloromethane). (Warning! Precautions must be taken!)

Advice: It is extremely difficult to remove parts subsequently from glass surfaces as resin solvent can only reach the adhesive near the edges.

UHU plus schnellfest should therefore not be used for sticking signs, letters and similar items to large glass surfaces such as shop windows, since the bond is so strong that the dimensional changes in the metal could result in the glass breaking under unfavourable conditions.

Points of attention: Protective precautions:

When using UHU plus schnellfest, care should be taken that the hands are kept clean. After working with the adhesive, the hands should be cleaned using soap and water – never solvent – as soon as possible. For mass production, the workplace must be well ventilated. Once hardened, UHU plus is physiologically safe and has no smell or taste.

CURE TIMES

Dry/Cure time: approx. See chart:

* Curing time may vary depending on a.o. surface, product quantity used, humidity level and ambient temperature.

TECHNICAL PROPERTIES

Temperature resistance: Between -40 and +100°C (dependent on material and construction; higher temperatures may also be possible - see chart). High temperatures are not necessary for the hardening process, as hardening is exothermic (i.e. it generates its own heat). If a bond is to be subject to long-term exposure to heat, this should not exceed 100°C, although the substance can withstand short-term temperatures of up to 180°C. UHU plus schnellfest is substantially resistant to ageing and weathering. The adhesive is not affected by even extremely low temperatures.

Chemicals resistance: many solvents, dilute acids and alkalis. UHU plus schnellfest joins a substantially resistant to moisture and a range of solvents. Dilute acids, dilute alkalis and mineral oil have little effect on bond strength, even in the event of lengthy exposure. No universally valid data can be given as there are always many factors, such as the possibility of corrosion, duration of exposure and temperature, that affect the assembly. Some solvents, such as methylene chloride, trichloroethylene and chloroform (Warning! Precautions must be taken!), soften the adhesive over a period of time. This effect can be made use of for dissolving adhesive joins.

TECHNICAL SPECIFICATIONS

Appearance: Colourless, transparent

Chemical base: binder: epoxy resin; hardener: polymer

Bonding technique: Wet adhesion

Colour: Transparent

Consistency: Medium viscosity

Viscosity: binder: 30.000; hardener: 15.000 mPa.s.

Solid contents: approx. 100 %

Density: approx. binder: approx. 1.18; hardener approx. 1.14 g/cm³

Specifications:

Mechanical strength values: Mixing ratio (by volume) 1:1; testing at room temperature

Firm to the touch: 20 mins

Firm enough to use: 1 hour

Final firmness: 12 hours

Combined tension and shear resistance (aluminium): Mixing ratio (by volume) 1:1; testing at room temperature

10 mins: 150N/cm²

30 mins: 900N/cm²

1 hour: 1100N/cm²

1 month: 1300N/cm²

Flame point [°C]

binder: approx. 220; hardener: approx. 110

Optimum temperature for use between +18 and +20°C

TEST CONDITIONS / EXECUTION

Testing:

In accordance with DIN 53286; testing fixed at pressure of 1 bar; seven days' storage at 20°C / 65% relative humidity prior to testing; Zwick testing machine with temperature chamber (testing speed: 50 mm/min.).

Test conditions: Application surface: 25 x 10 mm = 250mm²

Test piece: AlCuMg 1, sandblasted (Korund ELK 90): 82.5 x 25 x 1.5 mm

Mixing ratio (binder and hardener, by volume) 1:1 = mixing ratio (by weight)

100:100

Hardening at room temperature

PACK SIZES

Package sizes: Tube of binder, tube of hardener, 35g

Tin of binder, 885g / tin of hardener, 855g