

UHU plus sofortfest

UHU plus sofortfest is a solvent-free two-component adhesive based on epoxy resin that allows particularly fast assemblies using a wide range of materials.

Specification of UHU plus sofortfest	
Chemical basis	epoxy resin
Adhesive technique	wet adhesion
Temperature range for use	between -40 and + 80°C (dependent on material and construction; higher temperatures may also be possible)
Consistency	medium viscosity
Viscosity [mPa.sec]	binder: 30000 hardener: 17500
Basis	binder: epoxy resin hardener: polymer
Solvent	None
Solid body content [%]	100
Density [gm/cm³]	Binder: approx. 1.18 hardener: approx. 1.13
Flame point [°C]	binder: approx. 220 hardener: approx. 110
Danger category under German legislation	None
Indication(s) according to legislation on dangerous substances	binder: irritant; contains epoxy resin hardener: irritant; contains amines
Danger symbol(s)	Xi; N
Working life (at 20°C)	1 min.
Mechanical strength values:	Mixing ratio (by volume) 1:1; testing at room temperature Firm to the touch: 5 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 5 mins: 250N/cm ² 10 mins: 440N/cm ² 1 hour: 800N/cm ² 1 month: 1000N/cm ²
Mixing ratio (by volume)	1:1
Optimum temperature for use	between +18 and +20°C
Resistance	many solvents, dilute acids and alkalis
Unsuitable materials	polyethylene, polypropylene, Teflon®, polystyrene, soft PVC and various other materials
Colour	Colourless, transparent

Properties:

After the two components have been mixed, UHU plus sofortfest 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.

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Dosing and mixing:

The **mixing ratio** of the two components is 1:1 parts 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.

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 2 minutes.

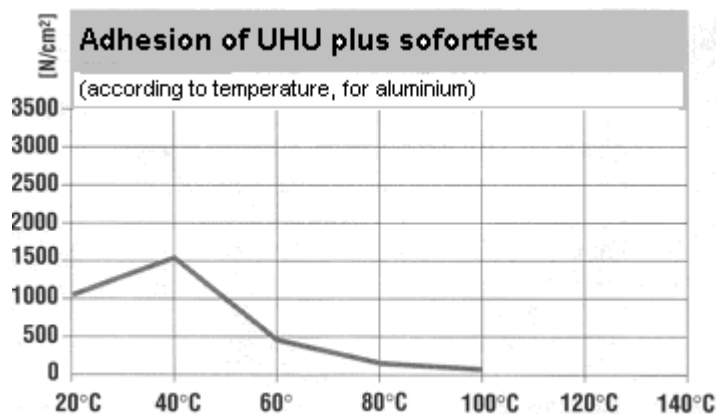
Hardening:

At room temperature UHU plus sofortfest hardens so that the join is firm within 5 minutes at the most; after 10 minutes approximately half the final bond strength is reached, and after 1 hour the final bond strength is reached.

The application of heat speeds up the hardening process.

Conditions for hardening:

Temperature	Minimum hardening time
+ 5°C	50 minutes
+10°C	30 minutes
+20°C	10 minutes
+25°C	7 minutes



Mixing ratio
(binder and hardener, by
volume) 1:1
= mixing ratio (by weight)
100:80

Hardening at room
temperature

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; 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

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Note:

Rapid hardening systems generally show a certain degree of loss after the increase in the bond strength and vary around a lasting average value.

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.

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

UHU plus sofortfest 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.

Resistances:

UHU plus sofortfest joins are 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.

UHU plus sofortfest is resistant to ageing and weathering. The adhesive is not affected by even extremely low temperatures.

Application:

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. 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.)

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

Possibility of modifying the product:

It is possible to modify UHU plus sofortfest 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.

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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). Please make sure that the instructions for using this solvent are followed properly at all times.

Protective precautions:

When using UHU plus sofortfest, 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.

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

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.