

# UHU® PLUS BLACK

## EXTREMELY STRONG, UNIVERSAL, SOLVENT-FREE, DUAL-COMPONENT EPOXY ADHESIVE, IDEAL FOR FIBER COMPOSITES



### PRODUCT DESCRIPTION

Extremely strong, universal, solvent-free, dual-component epoxy adhesive, ideal for fiber composites.

### FIELD OF APPLICATION

Suitable for bonding metal, stone, concrete, porcelain, wood, glass, many synthetics. Ideal for (industrial) joints, which must meet the highest requirements, such as in electrical engineering, metalworking and automation. Not suitable for bonding of PE, PP, PTFE, polystyrene and soft PVC.

### PROPERTIES

- Extremely high final bond strength (300 kg/cm<sup>2</sup>)
- Extremely loadable
- Shockproof
- Filling
- Water resistant
- All-weather resistant
- Solvent-free
- Resistant to many solvents, diluted acids and alkalis
- Can be sanded, filed, drilled and painted after curing

### PREPARATION

**Working conditions:** Only use at temperatures between +15°C and +25°C and with maximum relative humidity of 65%. To prevent the formation of bubbles by condensation, the temperature of the adhesive and materials to be bonded should be the same as the ambient temperature and preferably between +18°C and +20°C. Process in a draft-free space.

Temperatures below +18°C slow down the curing process and result in less bonding strength. Additional heat (heater, infrared heater, or similar) is necessary for processing in cold conditions and in open air. Higher final bond strength is achieved when the curing process takes place at high temperatures (up to a max. 180°C).

**Personal safety:** It is recommended that rubber or plastic gloves are worn.

**Surface requirements:** The materials to be bonded must be dry, clean free of grease.

**Preliminary surface treatment:** Thoroughly clean surfaces before bonding, for example, with acetone. Depending on the surface, you can rough the parts to be bonded.

**Tools:** Plus Gun and Plus static mixers.

### APPLICATION

**Mixture ratio:** 1:1

Place the double syringe in the Plus Gun. Remove the cap of the double syringe. Press both components from both chambers and then place the Plus Static mixer. Apply the adhesive to rough materials on both sides, to smooth materials on one side. Next add materials together and fixate (clamping or pressing is not necessary). After use, remove static mixer and place cap on the double syringe.

**Potlife:** 90 min

**Stains/residue:** Remove wet adhesive residue immediately with warm water and soap. Dry adhesive residue can only be removed mechanically.

### CURE TIMES\*

**Handling time:** approx. 6 hours (at room temperature)

**Drying/Curing time:** approx. after about 12 hours of functionally loadable (at room temperature)

**Final bonding strength after:** approx. 24 hours (at room temperature).

At higher temperatures higher final strengths and shorter curing times are possible, see table:

Shear strength UHU PLUS BLACK		
Temperature	Curing time	Final resistance <sup>1</sup>
20°C	12 hours	± 1200 N/cm <sup>2</sup>
40°C	3 hours	± 1800 N/cm <sup>2</sup>
70°C	45 min	± 2000 N/cm <sup>2</sup>
100°C	10 min	± 2500 N/cm <sup>2</sup>
180°C	5 min	± 3000 N/cm <sup>2</sup>

<sup>1</sup> Aluminum-Aluminum

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

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.

**UHU**<sup>®</sup>

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## TECHNICAL PROPERTIES

**Moisture resistance:** Good

**Temperature resistance:** From -40°C to +100°C

**Chemicals resistance:** Good

**Paintability:** Good

**Filling capacity:** Very good

## TECHNICAL SPECIFICATIONS

**Chemical base:** resin: epoxy resin; hardener: aliphatic amines

**Colour:** Black

**Viscosity:** approx. hars: 40.000 mPa.s.; harder: 30.000 mPa.s., Pasty

**Solid matter:** approx. 100 %

**Density:** approx. resin: about 1.2; hardener approximately 0.9 g/cm<sup>3</sup>

**Final bond strength:** approx. 3000 N/cm<sup>2</sup>

**Shrinkage:** approx. 0 %

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