

## TECHNICAL DATASHEET

### 1675-1

(Resin 1673-1 + Hardener 1664)

#### Description

1675-1 is a non-sagging, two-part modified methacrylate adhesive designed for structural bonding of thermoplastic, metal, and composite assemblies. Combined at a 10:1 (V:V) mixing ratio, it has a working time of 2 to 4 minutes. The fast strength build-up provides short cycle times (~8 min up to 10 N/mm<sup>2</sup>). The cured adhesive offers a balanced profile of properties with high stiffness combined with a strong toughness. The is mainly used as an universal grade for industrial applications where composites are involved. With its fast strength build-up particularly suitable for smaller-area applications where short fixture times are preferred, e.g. holders, pins and clips.

**1675-1 fulfills the requirements according to  
DIN EN 45545-2 chart 5, R1, R7 and R17 with HL1-3.**

#### Advantages

- Good adhesion to a wide range of materials
- Non-dropping paste
- Bridges gap up to 10 mm
- Minimum gap 75 µm (Spacer)
- Optically visible hardening process – colour changes from blue to green
- Excellent resistance against dynamic loads
- Resistant against outside conditions and humidity
- 100% reactive compound
- Low odour
- High flashpoint > 60 °C

#### Physical properties (uncured):

Chemical base	Modified methacrylate		
Curing system	2-Component-System		
Mixing ratio by volume	10 : 1 (Resin 1673-1 : Hardener 1664)		
Mixing ratio by mass	10 : 1.08 (Resin 1673-1 : Hardener 1664)		
Viscosity at 25 °C (Shear rate 1 s <sup>-1</sup> )	Resin	1673-1	~ 200'000 mPa•s
	Hardener	1664	~ 60'000 mPa•s
Viscosity at 25 °C (Shear rate 35 s <sup>-1</sup> )	Resin	1673-1	~ 20'000 mPa•s
	Hardener	1664	~ 6'000 mPa•s
Density	Resin	1673-1	1.06 g/cm <sup>3</sup>
	Hardener	1664	1.15 g/cm <sup>3</sup>

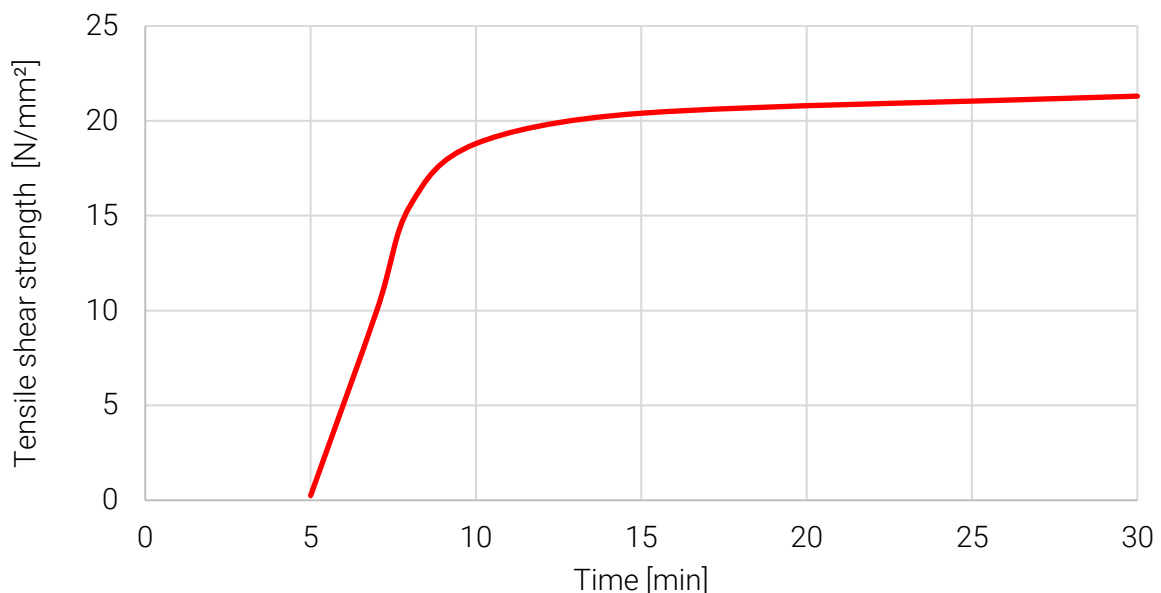
Colour	Resin	1673-1	Off-white
	Hardener	1664	Blue
Gap filling			Up to 10 mm
Minimum gap / Spacer			75 µm
Shelf life in 50ml 10:1 cartridge			12 months at 4 – 23 °C
Shelf life in 490ml 10:1 cartridge			12 months at 4 – 23 °C
Shelf life Hardener 1664 in 2.5kg up to 20kg			12 months at 4 – 23 °C
Flashpoint			> 60 °C

**Curing properties:**

Application temperature	+10 °C to +40 °C
Open time	2 – 4 minutes
Fixture strength [ $\sim 1 \text{ N/mm}^2$ ]	$\sim 6$ minutes
Functional strength [ $\sim 10 \text{ N/mm}^2$ ]	$\sim 8$ minutes
Final strength	12 hours

Tensile shear strength according to DIN EN 1465, at 23°C steel-steel corundum-blasted

Strength build-up



**Physical properties (cured):**

Colour	Olive green
Usage temperature	- 55°C to + 120°C
Flexural modulus (DIN EN ISO 178) after 72 h at 23°C	~ 550 N/mm <sup>2</sup>
Tensile strength (ISO 527 1A) after 72 h at 23°C	~ 14 N/mm <sup>2</sup>
Elongation at break (ISO 527 1A) after 72 h at 23°C	~ 65 %
Lap shear strength (DIN EN 1465) Curing: 24 hours at 23 °C, test temperature 23 °C, metals and composites corundum blasted	
Steel	~ 23 N/mm <sup>2</sup>
Aluminium	~ 22 N/mm <sup>2</sup>
CFRP Epoxy	~ 21 N/mm <sup>2</sup>
GFRP	~ 17 N/mm <sup>2</sup>
ABS	> 5 N/mm <sup>2</sup> (X)
PC	> 7 N/mm <sup>2</sup> (X)
PVC	> 4 N/mm <sup>2</sup> (X)
PMMA	> 5 N/mm <sup>2</sup> (X)

(X) = Failure of test specimen

<b>Chemical resistance</b>	
Excellent in	Hydrocarbons Acidic solutions (pH 3 – 10) Alkaline solutions (pH 3 – 10) Salt solutions
Unstable in	Polar solvents Strong Acidic/alkaline solutions

**Handling and storage**

Due to the high reactivity of the product and the exothermic curing process, never mix bigger amount of the components. The heat might evaporate parts of the formulation and cause strong smell. Do not waste exceeded material in plastic containers, because of the danger of melting.

Slight serum formation may occur during storage.

The serum does not imply any quality issues and can be ejected when levelling the cartridge before first use.

### **Precautions**

For your own safety, please refer to the information of the concerned MSDS and for the correct handling the “user instructions”.

The information in this data sheet is based on the results of our research and experience. However, the suggestions herein concerning the use, application, and processing of the products (collectively, „the methods“) **are non-binding recommendations only**. It is the user's sole responsibility to determine the suitability and safety of these methods, based on the user's particular purpose in using the products. Before relying on the reliability and safety of any parts that are bonded using the products, it is extremely important that the user test the reliability and safety of the parts that are bonded. Failure to do so could result in serious personal injury. Because of the use of the products are within the purchaser's sole control, Kisling Corporation specifically disclaims all warranties, express or implied, including warranties of merchantability or fitness for a particular purpose, arising from the sale or use of the products described herein. Kisling Corporation specifically disclaims any liability for consequential, incidental, or other damages of any kind, including lost profits. Kisling Corporation's liability for damages shall not exceed the purchase price of the products used.

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