BONDING +
SEALING +
ENCAPSULATION

Kisling

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^2). 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^{-1})	Resin	1673-1	~ 200‘000 mPa•s
	Hardener	1664	~ 60‘000 mPa•s
Viscosity at 25 °C (Shear rate 35 s^{-1})	Resin	1673-1	~ 20‘000 mPa•s
	Hardener	1664	~ 6‘000 mPa•s
Density	Resin	1673-1	1.06 g/cm³
	Hardener	1664	1.15 g/cm³

Colour	Resin	1673-1	Off-white
	Hardener	1664	Blue

Gap filling	Up to 10 mm
Minimum gap / Spacer	75 µm

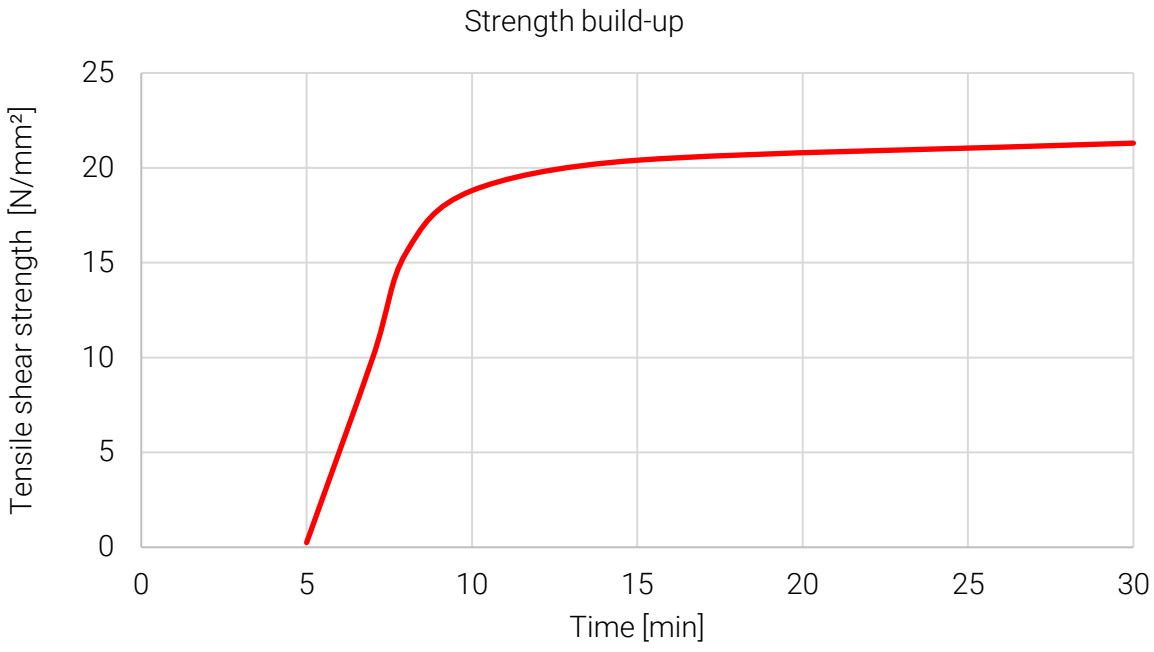
Shelf life in 50ml 10:1 cartridge	12 months at 4 – 23 °C
Shelf life in 490ml 10:1 cartridge	12 months at 4 – 23 °C
Shelf life Hardener 1664 in 2.5kg up to 20kg	12 months at 4 – 23 °C

Flashpoint	> 60 °C

Curing properties:

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

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



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/mm²
Tensile strength (ISO 527 1A) after 72 h at 23°C	~ 14 N/mm²
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/mm²
Aluminium	~ 22 N/mm²
CFRP Epoxy	~ 21 N/mm²
GFRP	~ 17 N/mm²
ABS	> 5 N/mm² (X)
PC	> 7 N/mm² (X)
PVC	> 4 N/mm² (X)
PMMA	> 5 N/mm² (X)

(X) = Failure of test specimen

Chemical resistance

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”.

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