BONDING +
SEALING +
ENCAPSULATION

Kisling

TECHNICAL DATASHEET

1665
(Resin 1663 + Hardener 1664)

Description
1665 is a non-sagging, two-part methyl 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 3 to 6 minutes. 50% of the final strength (at 23°C) will be achieved already within 15 to 18 minutes. 1665 is mainly used as an universal grade for industrial applications where composites are involved. Normally it does not require any surface preparation. It is often used in following industries: Household appliance (white ware), advertising panels, traffic guidance systems, electronic and electrical engineering, vehicle industry, furnishment, windows and doors, bus-, truck-, rail and car industry, boat and ship construction.

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

Product data

Chemical base	Methyl methacrylate adhesive
Curing system	2-Component-System
Mixing ratio by volume	10 : 1 (Resin 1663 : Hardener 1664)
Colour (after curing)	Olive green

Physical properties (uncured):

Shelf life in 50ml 10:1 cartridge			12 month at 4 – 23 °C
Shelf life in 490ml 10:1 cartridge			6 month at 4 – 23 °C
Shelf life Resin 1663 in 10 up to 15kg			6 month at 4 – 23 °C
Shelf life Hardener 1664 in 2.5kg up to 20kg			12 month at 4 – 23 °C
Colour	Resin	1663	Off-white
	Hardener	1664	Blue
Density	Resin	1663	~ 0.99 g/cm³
	Hardener	1664	~ 1.15 g/cm³

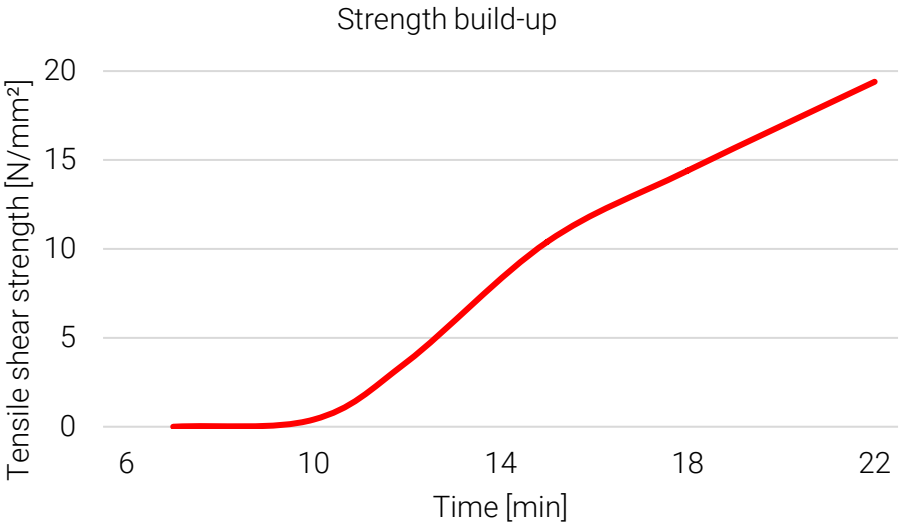
Viscosity at 25°C	Resin 1663 (Brookfield, spindle 7, 20 rpm)	~ 135'000 mPa•s
	Resin 1663 (Brookfield, spindle 7, 50 rpm)	~ 70'000 mPa•s
	Hardener 1664 (cone/plate, shear rate 1 s^{-1})	~ 60'000 mPa•s
	Hardener 1664 (cone/plate, shear rate 35 s^{-1})	~ 6'000 mPa•s

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

Curing properties:

Application temperature	+10 °C to +40 °C
Open time at 23°C	3 – 6 minutes
Fixture time at 23°C [~1 N/mm^2]	8 – 13 minutes
Functional strength at 23°C [~10 N/mm^2]	~15 minutes
Final strength at 23°C	12 hours

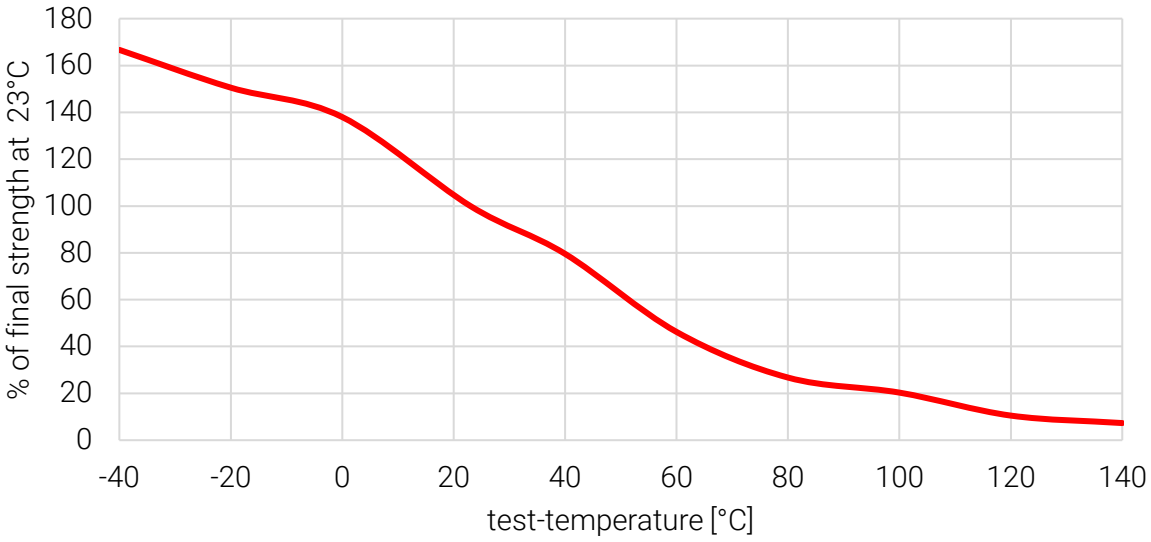
Tensile shear strength on steel (corundum-blasted) acc. to EN 1465 at 23°C



Physical properties (cured):

E Modulus (DIN EN ISO 178) after 24 h at 23°C	~ 450 N/mm²
Tensile strength (ISO 527-2/1A) after 24 h at 23°C	~ 15 N/mm²
Elongation at break (ISO 527-2/1A) after 24 h at 23°C	~ 100 %
Shore D	~ 67
Usage temperature	- 55°C to + 120°C

Tensile shear strength on steel (corundum-blasted) acc. to EN 1465,
after 72 hours at 23°C and 2 hours at mentioned test temperature



Lap shear strength (DIN EN 1465)

Curing: 24 hours at 23 °C, test temperature 23 °C, metals corundum blasted

Steel	> 20 N/mm²
Steel-Glass	> 10 N/mm² (X)
Aluminium	> 19 N/mm²
GFRP	> 17 N/mm² (X)
ABS	> 5 N/mm² (X)
PC	> 6 N/mm² (X)
PVC	> 7 N/mm² (X)
PMMA	> 6 N/mm² (X)

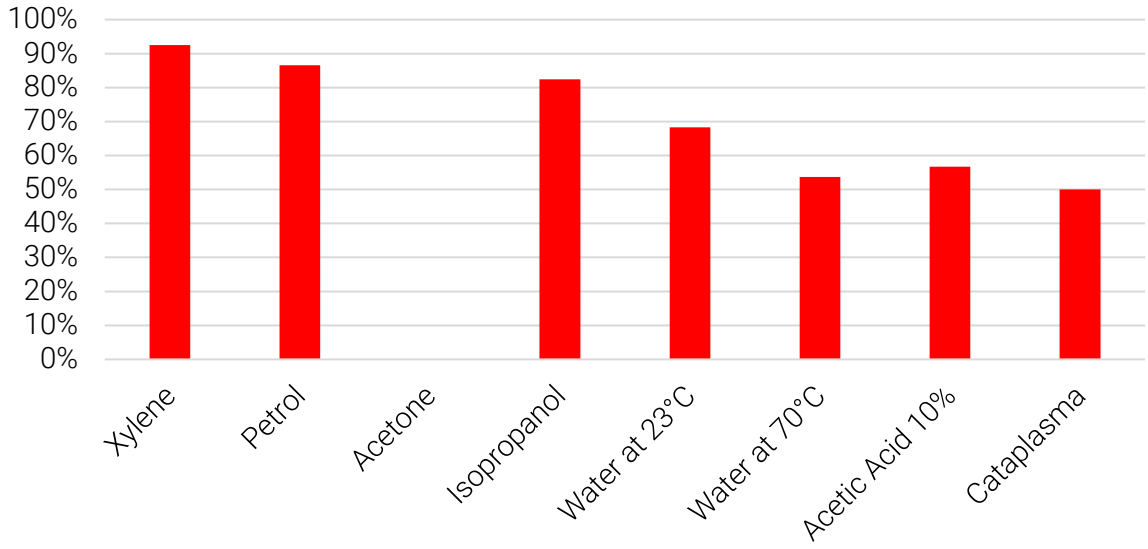
(X) = Failure of test specimen

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

Chemical resistance

Tensile shear strength acc. to DIN EN 1465; steel plates degreased and corundum-blasted;
curing for 7 days at 23 °C, storage for 30 days at 23 °C (excepted: Cataplasma); % to the reference



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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