

## Polytec UV 2181-1

### Description

- one-component acrylate/methacrylate hybrid
- solvent-free
- UV/VIS curing

### Product properties

- very fast curing
- medium viscous
- slightly thixotropic
- very good adhesion to thermoplastic substrates
- flexible
- impact resistant

### Special features

- no stringing

### Applications

- bonding, sealing, potting

### Processing information

After application, the joining of the parts should be done quickly, as some products already cure with daylight. Any contact of the adhesive with base metals, contamination with amines or reducing agents (e.g. vitamin C) should be strictly avoided, as this may lead to undesired premature curing of the product (e.g. in the metering unit).

### Surface preparation

The surfaces to be bonded should be free of dust, oil, grease or other contaminants in order to obtain an optimum and reproducible bond. For lightly soiled parts, wiping with isopropanol or ethanol is sufficient. Substrates that have a low surface energy (e.g. polyethylene, polypropylene, Teflon) must be physically pretreated (e.g. with atmospheric plasma or corona) to achieve sufficient adhesion.

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UV-light curing acrylate/ methacrylate adhesive

## Technical Information

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Properties in the uncured state	Method	Unit	Technical data
Chemical base	-	-	acrylate/methacrylate hybrid
Color	-	-	colorless, transparent
Number of components	-	-	1
Shelf life at max. 25°C	-	Month	6
Consistency	-	-	medium viscous, thixotropic
Density	-	g/cm <sup>3</sup>	app. 1.05
Viscosity rheometer, cone/plate	400 s <sup>-1</sup> at 23°C 10 s <sup>-1</sup> at 23°C	mPa·s	app. 320 app. 1,160

Properties in the cured state	Method	Unit	Technical data
Shore-hardness	Shore D curing at 395 nm*	-	53
Service temperature	-	°C	-40 / +80
Max. temperature short term	-	°C	app. +250
Glass transition temperature T <sub>g</sub>	DMTA	°C	66
Storage modulus E' at 23°C	DMTA	MPa	260
Coefficient of thermal expansion CTE at 20°C	TMA	ppm/K	140
Lap shear strength PC/PC PMMA/PMMA PC/PA6.6 PET/PET	curing at 395 nm*	N/mm <sup>2</sup>	4.3 6.6 5.3 4.9
Compressive shear strength glass/glass	curing at 395 nm*	N/mm <sup>2</sup>	10.5
Tensile strength	curing at 395 nm*	N/mm <sup>2</sup>	10.1
Elongation at break	curing at 395 nm*	%	320
Water absorption 24 hrs. 23°C 85°C	gravimetric, curing at 395 nm*	%	1.7 3.8

\*For some products, the through-curing is limited in 3 mm or by substrates, therefore the curing time for the determination of the measured value is adjusted individually.

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Curing*	Method	Unit	Technical data
Feasible UV-wavelength range	-	nm	365 - 405
Optimum wavelength range for curing	-	nm	395 - 405
Curing dose at 395 nm in 1 mm layer	-	mJ/cm <sup>2</sup>	1,800
Curing time at 1,500 mW/cm <sup>2</sup> @395 nm in 1 mm layer	-	sec	app. 1-2

\*High-power LED lamps are recommended for curing in order to introduce the optimum dose and wavelength with the highest possible energy yield and the lowest possible temperature load on the substrate.

### Work and health protection

See safety data sheet.

### For your attention:

The above data can only be general information. The properties and performance characteristics listed are typical values and do not form part of the product specification. Due to the processing and application conditions beyond our control and the large number of different materials, we recommend that you first carry out your own tests. Therefore, no liability for concrete application results can be derived from the information and notes in this data sheet. With the publication of this edition, all previous technical data sheets become invalid.

Polytec PT GmbH  
Polymere Technologien

Ettlinger Straße 30  
76307 Karlsbad  
Germany  
Phone +49 (0)7202 706-3500  
info-pt@bostik.com  
www.polytec-pt.com

Polytec PT GmbH  
Polymere Technologien  
Plant Maxdorf  
Bahnhofstr. 1  
67133 Maxdorf  
Germany

info-pt@bostik.com  
www.polytec-pt.com