Technical Information

Polytec UV 3174

Description

- one-component cationic epoxy resin
- solvent-free
- UV/VIS curing

Product properties

- medium viscous
- impact resistant
- temperature shock resistant
- moisture resistant
- dry surface after curing

Special features

- no stringing

Applications

- bonding, sealing, potting

Processing information

Any contact of the adhesive with basic substances or amines should be strictly avoided, as this may prevent the curing of the product.

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 epoxy based adhesive

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Version 01/2023

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Properties in the uncured state	Method	Unit	Technical data
Chemical base	-	-	BISPHENOL-A-free epoxy resin
Color	-	-	yellow, opaque
Number of components	-	-	1
Shelf life at max. 25°C	-	Month	6
Consistency	-	-	medium viscous
Density	-	g/cm³	app. 1,05
Viscosity rheometer, cone/plate	400 s^{-1} at 23°C	mPa·s	app. 1,040

Properties in the cured state	Method	Unit	Technical data
Shore-hardness	Shore D curing at 395 nm*	-	82
Service temperature	-	°C	-40 / +150
Max. temperature short term	-	°C	+280
Lap shear strength PC/aluminum PC/stainless steel FR4/FR4 PET/PET	curing at 395 nm*	N/mm²	 5.3 3.0 23.0 1.1
Tensile strength	curing at 395 nm*	N/mm²	41
Elongation at break	curing at 395 nm*	%	8
Water absorption 24 hrs. at 23°C	gravimetric, curing at 395 nm*	%	1.1
Outgassing 24 hrs. at 150°C	gravimetric, curing at 395 nm*	%	1.5

*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/cm²	3,000
Curing time at 1,500 mW/cm² @395 nm in 1 mm layer	-	sec	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.

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