

Technical Datasheet

Vitralit® 50004



Product Description

Panacol Vitralit® adhesives are one-component, solvent-free radiation-curing adhesives. The advantages are very short curing times, good adhesion to a variety of substrates, and easy handling. Vitralit® products are used in electronics, medical applications, optics and for fixing parts in general.

Vitralit® 50004 is an ultra-low viscosity, UV / Visible light curable adhesive that adheres to a variety of substrates including coated glass, metals, PET, and other plastics and films. This adhesive offers the optimal balance of high strength bonding with full re-workability. Vitralit® 50004 possesses a very low viscosity that facilitates fast filling of cavities without air entrapment. Vitralit® 50004 cures quickly with minimal shrinkage for less residual stress between substrates.

When properly cured, the low durometer and stress-free adhesion of Vitralit® 50004 contribute to distortion-free display. Its high degree of flexibility enhances performance through repeated thermal excursions. Vitralit® 50004 is colorless, with superior optical clarity for excellent light transmission. Slower curing with lower intensity can help to minimize stress between the bonded surfaces.

Curing Properties

UV-A	VIS	Thermal curing	Activator curing
✓	✓	-	-

✓suitable - not suitable

The product cures within seconds with radiation in the UV-A - range (320 nm - 390 nm) and visible range (405 nm). For rapid and high quality crosslinking we recommend the UV devices manufactured by Dr. Hoenle AG, which complement our adhesive technology.

UV-curing (Spot 400, Fe-Spectra)		
Intensity [mW/cm²]	Layer thickness [mm]	Time [sec]
60	0,1	30

UV-curing (LED 365nm)		
Intensity [mW/cm²]	Layer thickness [mm]	Time [sec]
400	0,1	30

VIS-curing (LED 405nm)		
Intensity [mW/cm²]	Layer thickness [mm]	Time [sec]
650	0,1	240

To obtain full cure at least one substrate must be transparent to the recommended wavelength. The curing speed will depend on the intensity of light, light source, the exposure time, and the light transmittance of the substrate. Increased mechanical properties are achieved after 12 hours.

Technical Data

Resin
Appearance

acylate
transparent

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Uncured material

Viscosity [mPas] (Brookfield LVT, 25°C, Sp. 2/30rpm) <i>PE-Norm 001</i>	50 - 200
Density [g/cm ³] <i>PE-Norm 004</i>	1,1
Flash point [°C] <i>PE-Norm 050</i>	>93
Refractive index [nD20] <i>PE-Norm 018</i>	1,478

Cured material

Temperature resistance [°C]	-40 - 140
Glass transition temperature DSC [°C] <i>PE-Norm 009</i>	-80 - -60

Transport/Storage/Shelf Life

Trading unit	Transport	Storage	Shelf-life*
Cartridge	at room temperature max. 25°C	at room temperature max. 25°C	at delivery min. 6 months max. 12 months
other packages			

***Store in original, unopened containers!**

Instructions for Use

Surface preparation

The surfaces to be bonded should be free of dust, oil, grease or other dirt in order to obtain an optimal and reproducible bond.

For cleaning we recommend the cleaner IP® Panacol. Substrates with low surface energy (e.g. polyethylene, polypropylene) must be pretreated in order to achieve sufficient adhesion.

Application

Our products are supplied ready to use. Depending on packaging they can be applied by hand directly from the container or semi or fully automatically. With automated application from the cartridge the adhesive is conveyed by a compressed air-operated displacement plunger via a valve in the needle. When metering low viscosity materials from bottles the adhesive is transported by a diaphragm valve. If help is required, please contact our application engineering department.

Adhesive and substrate may not be cold and must be warmed up to room temperature prior to processing.

After application, bonding of the parts should be done quickly. Vitralit® adhesives cure slowly in daylight. Therefore, we recommend to expose the material to as little light as possible and the use of opaque hose lines and dispensing needles. For safety information refer to our safety data sheet.

Disclaimer

The product is free of heavy metals, PFOS and Phthalates and is conform to the EU-Directive 2017/2102/EU "RoHS III".

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