Technical Datasheet
Vitralit® 7311 T

Product Description

Panacol Vitralit® adhesives are one-component, solvent-free radiation-curing adhesives. The advantages are very short curing time, 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® 7311 T is a UV/VIS curing acrylate adhesive. Vitralit® 7311 T bonds to a broad array of materials including polycarbonate, stainless steel, PVC, nylon, glass, and ABS. When properly cured, Vitralit® 7311 T bonds high strength bonds that are clear and firm. Vitralit® 7311 T develops a dry, tack-free surface with high resistance to moisture. Vitralit® 7311 T cures extremely quickly with broad spectrum UV lamps (320-450 nm), as well as monochromatic LED lamps. Optimal LED curing is achieved using LED systems with outputs of 365nm or 405nm. Vitralit® 7311 T has been formulated to pass USP Class VI biocompatibility testing. Vitralit® 7311 T is compatible with common sterilization methods including gamma irradiation, EtO, and limited autoclaving.

Curing Properties

UV-A	VIS	Secondary heat cure	Activator curing
✓	✓	-	-

✓suitable - not suitable

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

UV-curing (Hoenle Discharge lamp, 320-450nm)		
Intensity [mW/cm²]	Layer thickness [mm]	Time [sec]
60	0,5	5

VIS-curing (Hoenle LED Spot 100, 405nm)		
Intensity [mW/cm²]	Layer thickness [mm]	Time [sec]
1000	0,5	2

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	acrylate
Appearance	transparent

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Uncured material

Viscosity [mPas] (Kinexus Rheometer, 25°C, $1s^{-1}$) *PE-Norm 064*	10 000 - 30 000
Viscosity [mPas] (Kinexus Rheometer, 25°C, $10s^{-1}$) *PE-Norm 064*	1 000 - 3 000
Density [g/cm³] *PE-Norm 004*	1,03
Flash point [°C] *PE-Norm 050*	>100
Refractive index [nD20] *PE-Norm 018*	1,4729

Cured material

Hardness shore D *PE-Norm 006*	40 - 65
Temperature resistance [°C]	-40 - 120
Shrinkage [%] *PE-Norm 031*	<3
Water absorption [mass %] *PE-Norm 016*	<3

Glass transition temperature DSC [°C] *PE-Norm 009*	30 - 40
Coefficient of thermal expansion [ppm/K] below Tg *PE-Norm 017*	50 - 150
Coefficient of thermal expansion [ppm/K] above Tg *PE-Norm 017*	350 - 550

Young's modulus[MPa] *PE-Norm 056*	103
Tensile strength [MPa] *PE-Norm 014*	8
Elongation at break [%] *PE-Norm 014*	178
Lap shear strength (PC/stainless steel) [MPa] *PE-Norm 013*	10
Lap shear strength (PC/PC) [MPa] *PE-Norm 013*	11

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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 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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