

Technical Datasheet

Vitralit® 6108



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® 6108 is a single component, UV/Visible light curable adhesive that bonds to glass, stainless steel, ceramic, and some rigid plastics including polycarbonate. Vitralit® 6108 exceptional clarity and resistance to yellowing makes it an effective lens bonding and positioning adhesive. When properly cured, Vitralit® 6108 is clear, hard, extremely moisture resistant, and exhibits a dry, tack-free surface. Vitralit® 6108 cures very rapidly with broad spectrum UV and visible light, 320-450 nm. High intensity is not required. Vitralit® 6108 is also well suited for monochromatic LED arrays with output of 365nm or 405nm. Vitralit® 6108 also contains a latent catalyst to permit thermal curing if shadowed areas prohibit curing with light.

Vitralit® 6108 has passed USP Class VI biocompatibility testing. Vitralit® 6108 is ideally suited for assembly of syringes, needles, heat exchangers and other medical devices. Vitralit® 6108 is compatible with commonly used sterilization methods including, gamma irradiation, ethylene oxide, and limited autoclave.

Curing Properties

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

✓ suitable - not suitable

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

Bluepoint LED/LED-spot		
Wavelength [nm]	365	405
Suitability	++	+++

++ well-suited +++ ideal - not suitable

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.

UV-curing (Hoenle Discharge Lamp, 320-450nm)		
Intensity [mW/cm ²]	Layer thickness [mm]	Time [sec]
70	0,5	5

VIS-curing (Hoenle LED Spot 100, 405nm)		
Intensity [mW/cm ²]	Layer thickness [mm]	Time [sec]
1000	1	2

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Thermal curing	[min]
Time at 150°C (302°F)	30

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Resin	acrylate
Appearance	transparent

Uncured material

Viscosity [mPas] [cP] (Brookfield LVT, 25°C, sp 3/30 rpm) <i>PE-Norm 001</i>	600 - 900
Density [g/cm ³] <i>PE-Norm 004</i>	1,1
Flash point [°C] <i>PE-Norm 050</i>	>93 (200°F)
Refractive index [nD ₂₀] <i>PE-Norm 018</i>	1,47

Cured material

Hardness shore D <i>PE-Norm 006</i>	70 - 85
Temperature resistance [°C] <i>PE-Norm 065</i>	-40 - 140 (-40-284°F)
Shrinkage [%] <i>PE-Norm 031</i>	<3
Water absorption [mass %] <i>PE-Norm 016</i>	<1

Glass transition temperature DSC [°C] <i>PE-Norm 009</i>	45 - 70 (113-158°F)
Coefficient of thermal expansion [ppm/K] below T _g <i>PE-Norm 017</i>	99,0
Coefficient of thermal expansion [ppm/K] above T _g <i>PE-Norm 017</i>	276,0

Young's modulus [MPa] <i>PE-Norm 056</i>	1 500 (217 557 psi)
Tensile strength [MPa] <i>PE-Norm 014</i>	27,7 (4018 psi)
Elongation at break [%] <i>PE-Norm 014</i>	3,5
Lap shear strength (glass/stainless steel) [MPa] <i>PE-Norm 013</i>	10,8 (1 566 psi)
Lap shear strength (glass/Al) [MPa] <i>PE-Norm 013</i>	14,1 (2 045 psi)
Lap shear strength (glass/steel) [MPa] <i>PE-Norm 013</i>	13,6 (1 973 psi)

Transport/Storage/Shelf Life

Trading unit	Transport	Storage	Shelf-life*
Cartridge	at room temperature max. 25°C (77°F)	0°C - 10°C (32-50°F)	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 2011/65/EU "RoHS II".

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