Technical Datasheet
Vitralit® 2004 F

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® 2004 F is a combined UV- and thermally curable coating compound, based on epoxies. The surface is dry after the UV curing process, stability will be reached, as soon as the coating has cooled down. Deep layers or shadowed areas can be post cured thermally. Vitralit® 2004 F is a flexible coating, can be autoclaved and is highly chemical resistant. The product is set up fluorescent.

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). 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	60

Thermal curing	[min]
Time at 105°C	30

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 24 hours.

Technical Data

Resin	epoxy
Appearance	transparent

Uncured material

Viscosity [mPas] (Brookfield LV, 25°C, sp 2/30 rpm) *PE-Norm 001*	60 - 100
Density [g/cm³] *PE-Norm 004*	1,085
Flash point [°C] *PE-Norm 050*	>100
Refractive index [nD20] *PE-Norm 018*	1,491

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Cured material

Hardness shore D *PE-Norm 006*	15 - 25
Temperature resistance [°C]	-40 - 180
Shrinkage [%] *PE-Norm 031*	<2
Water absorption [mass %] *PE-Norm 016*	<1

Glass transition temperature DSC [°C] *PE-Norm 009*	13 - 17
Coefficient of thermal expansion [ppm/K] below Tg *PE-Norm 017*	53
Coefficient of thermal expansion [ppm/K] above Tg *PE-Norm 017*	215

Dielectric strength [kV/mm]	14
Dielectric constant [10kHz]	9

Tensile strength [MPa] *PE-Norm 014*	2
Elongation at break [%] *PE-Norm 014*	30

Transport/Storage/Shelf Life

Trading unit	Transport	Storage	Shelf-life*
Cartridge	0°C - 10°C	0°C - 10°C	At delivery min. 4,5 months, max. 9 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.

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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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Contact

Panacol-Elosol GmbH
Daimlerstr. 8
61449 Steinbach
Germany
Phone.: +49 6171 6202-0
Mail: info@panacol.de
www.panacol.com

Panacol-USA, Inc.
142 Industrial Lane
Torrington CT 06790
USA
Phone: +1 860-738-7449
Mail: info@panacol-usa.com
www.panacol-usa.com

Panacol-Korea Co., Ltd.
#707, Kranz Techno, 388 Dunchon-daero
Junwon-gu, Seongnam
Gyeonggi-do, 13403 KOREA
Phone: +82 31 749 1701
Mail: info@panacol-korea.com
www.panacol-korea.com

Eleco Panacol – EFD
125, av Louis Roche
Z.A. des Basses Noëls
92238 Gennevilliers Cdx FRANCE
Tél.: +33 (0)1 47 92 41 80
Mail: eleco@eleco-panacol.fr
www.eleco-panacol.fr