Technical Data Sheet
Rev Date: 22.01.2024

EUROBOND Vitralit VBB-1

Product Description

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® VBB-1 is a UV/visible light curable, multi-substrate bonder that exhibits excellent peel strength. The cured Vitralit® VBB-1 is optically clear, exceptionally flexible and demonstrates outstanding elongation. Vitralit® VBB-1 is recommended for applications were a tough, durable and moisture resistant bond is required. Because of the ability to bond to many substrates and ability to withstand the stress off thermal cycling. Vitralit® VBB-1 is very well suited for use as a UV curable potting composition.

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	10
VIS-curing (Hoenle LED Spot 100, 405nm)		
Intensity [mW/cm²]	Layer thickness [mm]	Time [sec]
100	0,5	60

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	urethane acrylate
Appearance	transparent

Uncured material

Viscosity [mPas] (Brookfield LVT, 25°C, Sp 4, 30rpm) *PE-Norm 001*	1 000 - 1 500
Density [g/cm³] *PE-Norm 004*	1,1
Flash point [°C] *PE-Norm 050*	>93

Contact Details
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Refractive index [nD20] *PE-Norm 018*	1,4718

Cured material

Hardness shore A *PE-Norm 006*	50 - 70
Temperature resistance [°C]	-50 - 150 <5
Shrinkage [%] *PE-Norm 031*	<1
Water absorption [mass %] *PE-Norm 016*	
Glass transition temperature DSC [°C] *PE-Norm 009*	-45
Coefficient of thermal expansion [ppm/K] below Tg *PE-Norm 017*	80
Coefficient of thermal expansion [ppm/K] above Tg *PE-Norm 017*	329
Young's modulus E [MPa] *PE-Norm 056*	1
Tensile strength [MPa] *PE-Norm 014*	3
Elongation at break [%] *PE-Norm 014*	353
Lap shear strength (glass/glass) [MPa] *PE-Norm 013*	6
Lap shear strength (glass/Al) [MPa] *PE-Norm 013*	3
Lap shear strength (glass/steel) [MPa] *PE-Norm 013*	3
Lap shear strength (PC/PC) [MPa] *PE-Norm 013*	2
Lap shear strength (PC/PMMA) [MPa] *PE-Norm 013*	3
Lap shear strength (PC/FR4) [MPa] *PE-Norm 013*	2

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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 IPA.® Substrates with low surface energy (e.g. polyethylene, polypropylene) must be pre-treated in order to achieve sufficient adhes

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.
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

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy themselves as to the suitability of such information for their particular use.

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