Vitralit® 1655

Product Description

Vitralit® 1655 is an UV light cure, low viscosity, flexible and transparent adhesive. It was designed for bonding and coating of many substrates. It has good adhesion to a wide range of materials including plastics. Shadowed areas could be cured by exposure of heat.

Vitralit® 1655 has met the requirements for USP Class VI and ISO 10993-5 and is suitable for use in the assembly of disposable medical devices. It is compatible with different kinds of sterilization processes.

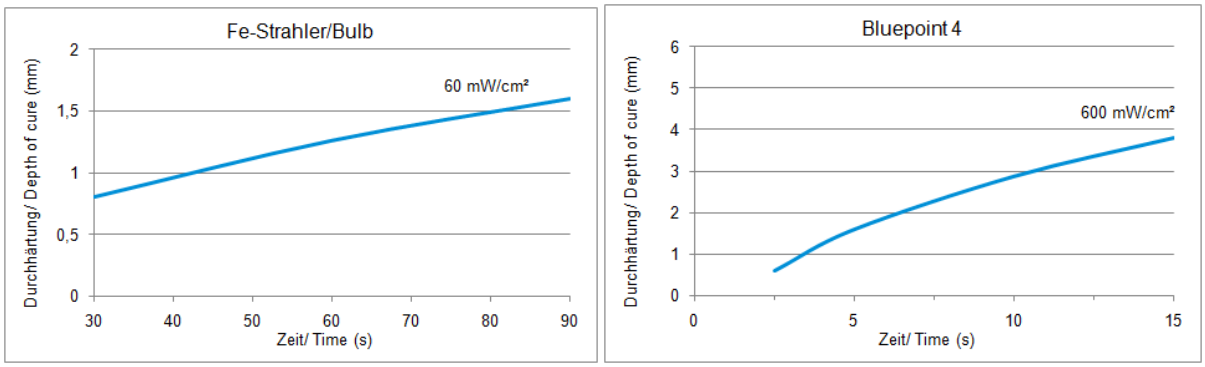
Curing Properties

Vitralit® 1655 can be cured by exposure of UV light. Increased cure properties are developed after 24 hours. For rapid and high quality bonding we recommend the UV devices (e.g. Bluepoint4) manufactured by Dr. Hönle AG, which complement our adhesive technology.

To obtain full cure at least one substrate must be transparent to UV light. The curing speed will depend upon the light intensity, light source, the exposure time, and the light transmittance of the substrate. Increased cure properties are developed after 24 hours.

Shadowed areas can be cured for 30 min at 105 °C.

The graph below shows the increase in depth of cure as a function of exposure time at two different intensities for two different curing devices.



Technical Data

Base	epoxy
Curing	one part, UV light thermal
Appearance	transparent

Uncured Material

Viscosity [mPas] Brookfield LVT, 25 °C, SP2/30rpm) PE-Norm 001	150 - 300
Density [g/cm³] PE-Norm 004	1,0 - 1,1
Flash Point [°C]	> 100

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Refractive Index n_D^{20} PE-Norm 018	1,487

Cured Material

Glass Transition Temperature DSC [°C] PE-Norm 009	30 - 40
Hardness Shore A PE-Norm 006	70 - 90
Coefficient of Linear Expansion below T_g PE-Norm 017	94
Coefficient of Linear Expansion above T_g PE-Norm 017	214
Linear Shrinkage [%] PE-Norm 031	2
Water Absorption [%], PE-Norm 016, 24 h Roomtemperature	0.7
Temperature Resistance [°C]	-50 - 150

Recommended Substrates

PMMA	●	ABS	✓
PC	●	SAN	✓
PVC	✓	PA	●
PET-A	●	Stahl/steel	●

✓ very good ● application related

Environmental Resistance

The table below shows the tensile shear strength of PET/PET bonding expressed as % from initial strength.

% of initial strength	
24h isopropanol	**7 days water, 21 °C**
100	100

Sterilization

Vitralit® 1655 shows good bond strength retention after sterilization. Generally the resistance depends on the substrate material, the curing parameters and the process of sterilization. It remains the user´s obligation to determine the effect of sterilization on the specific application and its requirements.

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Storage and Shelf life

The product can be stored for 6 month at 5 °C in unopened containers. Store under temperated, dry and dark conditions only.

Packaging Unit

Standard packaging units of 100 g and 1 kg are available. Others on request.

Instructions for Use

Surface Preparation

The surfaces to be bonded should be clean and free from oil and grease. Lightly soiled surfaces can be cleaned with our cleaner IP®. Substrates with low surface energy (such as polyethylene and polypropylene) need to be pretreated.

Application

Our products are supplied ready for use. They can be applied manually from the cartridges or automatically with air-operated dosing devices (catridge/piston combination). Depending on the amount of adhesive to be used, different valves are availabe. If help is required, please consult our application department.

For reliable and fast bonding the substrate temperature should be at room temperature.

Virtralit® products cure with UV and visible light. Therefore exposure of light should be kept to a minium during handling. We recommend using opaque feedlines and nozzles.

For safety information refer to our safety data sheet.

Note

Our data sheets have been compiled to the best of our knowledge. The enclosed information describes characteristic properties, with no declaration of commitment. We recommend trials in order to confirm that our products satisfy the particular application requirements. For an additional technical consultation, please contact our R&D department. In general, for warranty claims, please refer to our standard terms and conditions.

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