



Innovative Adhesives for Medical Applications

**Panacol Vitralit[®], Structalit[®]
and Cyanolit[®] Adhesives**

**Hönle UV-Curing Systems -
bluepoint LED eco, LED Powerline, LED Spot 100**

Adhesives

- Certified USP Class VI and/or ISO 10993
- 100% solvent free
- Fast curing with UVA and visible light
- Convenient handling
- Compatible with common sterilization processes

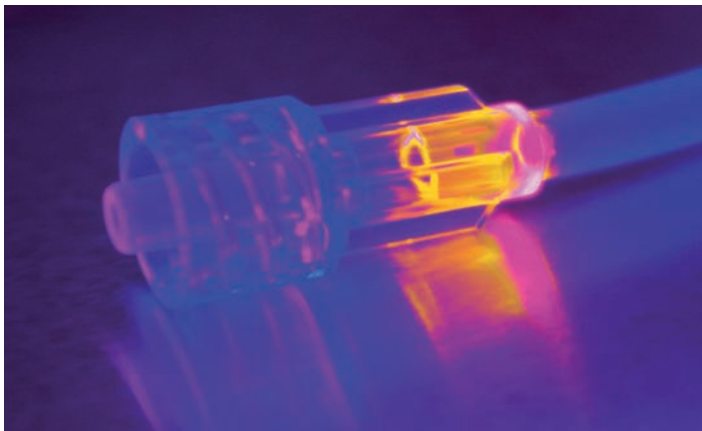
UV-Curing Systems

- High UV-intensity
- Curable with UV-LED only, to eliminate heat
- Easily adaptable to existing production lines
- Optimum quality, efficiency, and value
- LED failure detection for a save process

Advanced Adhesive Technologies for Medical Applications Certified USP Class VI and/or ISO 10993

Panacol develops and produces cutting-edge adhesives for medical applications within a wide range of chemistries. This includes UVA and visible light curable adhesives, coating materials, potting compounds, instant-cure adhesives, and 2-part epoxies.

All products are formulated to meet the biocompatibility standards of USP Class VI and/or ISO 10993 standards.



Key Benefits of Panacol High-Tech-Medical-Adhesives

- Certified USP Class VI and/or ISO 10993
- 100% solvent free
- High productivity due to fast curing within seconds
- Compatible with common sterilization processes
- Excellent adhesion to glass, plastics and metals
- Bonding of difficult substrates possible
- Flexible usage for manual and automated production process
- Wide viscosity range from capillary flow to gap filling
- Optimum process control with blue and orange fluorescent adhesives

Complete Solutions for Your Assembly Process

Dr. Hönlle Group offers compatible system technology: Panacol's high performance adhesives and complementing UV- and LED equipment manufactured by Dr. Hönlle AG ensure rapid bonding at an optimum quality.

Hönlle system solutions provide excellent technical competence and process reliability.

Typical Applications

- Joining stainless steel cannulae to transparent or translucent hubs and syringes
- Bonding/sealing of transparent polycarbonate or acrylic housing parts in blood oxygenators
- Bonding/sealing stainless steel cannulae into flexible PVC infusion lines
- Bonding soft PVC to rigid PVC in anaesthesia masks
- Bonding of subassemblies in blood pressure transducers, stopcocks, fittings, adapters and arterial filters
- Coating of PCBs in hearing aids



Needle Bonding

- Vitralit® 7041, 7311 and UV 4050 are excellent choices for metal-plastic bonding
- Vitralit® 6108/6108 T achieve optimum adhesion properties on glass and metal
- Reliable bonded joints without material cracking
- High extraction force after autoclave sterilization ETO- and gamma radiation treatment

Customized Solutions for Unique Applications

Panacol provides innovative solutions for your needs: All adhesives can be individually tailored and tuned to your special requirements. For further information please contact us at info@panacol.de.

| Adhesive | Base | Viscosity [mPas] | Curing* | Certification | Color | Properties |
|---------------------------|---------------|------------------|--------------------|-----------------------------|------------------------------|---|
| Structalite® 701 | 2-part epoxy | 3,000 – 5,000 | 2-compon., thermal | USP Class VI ISO 10993-5 | Brown | High resistance to heat, perfect for bonding surgical instruments/ endoscopes/light guides |
| Structalite® 5893 | 1-part epoxy | 6,000 – 10,000 | Thermal | ISO 10993-5 | Black | Specially formulated for encapsulation or glob top for electronic applications |
| Structalite® 8801 | 1-part epoxy | 30,000 – 45,000 | Thermal | ISO 10993-5 | Beige | Encapsulation of electronic devices, suited for potting of sensors |
| Vitralit® 1605 | 1-part epoxy | 200 – 400 | UV/thermal | ISO 10993-5 | Transparent | Low shrinkage, low coefficient of thermal expansion, high glass transition temperature, excellent chemical resistance, dual cure |
| Vitralit® 1655 | 1-part epoxy | 150 – 300 | UV/thermal | USP Class VI ISO 10993-5 | Transparent | Flexible, excellent adhesion to plastics and metals, dual cure |
| Vitralit® 7222 | 1-part epoxy | 200 – 500 | UV | USP Class VI | Transparent, slightly yellow | Excellent adhesion to glass, metal and many plastic substrates, perfect for assembly of electronic components of medical devices |
| Vitralit® 7311/FO | Acrylate | 40 – 70 | UV/VIS | USP Class VI | Transparent | Very good adhesion to many plastics, available in various viscosities, specially formulated for needle bonding, fluorescing orange |
| Vitralit® 7044 VLV | Acrylate | 10 – 100 | UV/VIS | USP Class VI | Transparent | Excellent adhesion to rubber and elastomers, perfect solution for elastic bonding |
| Vitralit® UV 4050 | Acrylate | 140 – 500 | UV/VIS | ISO 10993-5 | Transparent, slightly yellow | Very good adhesion to many plastics, glass and metal, specially formulated for bonding needles and syringes |
| Vitralit® 7041/F | Acrylate | 50 – 90 | UV/VIS | USP Class VI | Transparent, slightly yellow | Capillary flow, very good adhesion to many plastics (including PP and POM), suitable for needle bonding and joining connectors/tubes/housings or dialysis filters, fluorescent version available |
| Vitralit® 7041 T | Acrylate | shear thinning | UV/VIS | USP Class VI | Transparent, slightly yellow | Gap filling, stable, very high adhesion to many plastics, perfect for bonding of syringes and tattoo needles/connectors and tube sets, housings or dialysis filters |
| Vitralit® 7090 VHS | Acrylate | 40 – 100 | UV/VIS | USP Class VI | Transparent | Capillary flow, very high adhesion to plastics, very fast curing at low intensities, perfect solution to bond catheters, needles, or endoscopes |
| Vitralit® 7989 | Acrylate | 3,000 – 5,000 | UV/ LED | USP Class VI | Transparent, slightly yellow | Flexible, excellent adhesion to plastics, perfect solution to bond PC housings and lids or containers |
| Vitralit® 5140 | Acrylate | 250 – 500 | UV/VIS | USP Class VI | Transparent | Flexible, well suited for bonding plastics with low UV transluence and permeable to visible light, perfect solution for coatings of electr. components in medical devices or bonding of breathing masks |
| Vitralit® 1702 | Acrylate | 45 – 80 | UV/VIS | USP Class VI | Transparent, amber | Very high adhesion to plastics, capillary flow, high E-modulus, perfect solution for bonding hose connections, back-pressure valves or blood filters |
| Vitralit® 1703 | Acrylate | 85,000 – 130,000 | UV/VIS | USP Class VI | Transparent | Excellent adhesion to plastics, gap-filling, high E-modulus, specially formulated to bond hose connections, back-pressure valves and blood filters |
| Vitralit® 4731 | Acrylate | 900 – 1,500 | UV/VIS | USP Class VI ISO 10993-5 | Transparent | Flexible, excellent adhesion to glass and plastics, specially formulated to bond hose connections or housings |
| Vitralit® 7562 | Acrylate | 500 – 800 | UV/VIS | USP Class VI ISO 10993-5 | Transparent | Flexible, very high adhesion to glass and metal, specially formulated to bond glass apparatuses |
| Vitralit® 6108 | Acrylate | 600 – 900 | UV/VIS/ thermal | USP Class VI ISO 10993-5 | Transparent | UV-curing and thermally postcuring (dual cure), high resistance to moisture, very high adhesion to glass and metal, specially formulated to bond needles and glass apparatuses |
| Vitralit® 6108 T | Acrylate | 4,000 – 6,000 | UV/VIS/ thermal | USP Class VI | Transparent | UV-curing and thermally postcuring (dual cure), gap-filling, high resistance to moisture, ideally suited for bonding of syringes, needles and glass apparatuses |
| Cyanolit® 203 TX | Cyanoacrylate | shear thinning | RT | USP Class VI | Transparent | Gap-filling, high adhesion to plastics (PA, PC, ABS, PVC, EPDM), ideally suited for bonding of hose connections and porous substrates |
| Cyanolit® 241 F | Cyanoacrylate | 30 – 50 | RT | USP Class VI | Transparent | Capillary flow, very good wetting properties, ideally suited for bonding of plastics (PVC, PMMA)/copper/aluminum/steel |
| Cyanolit® 732 F | Cyanoacrylate | 230 – 350 | RT | USP Class VI | Transparent | Short curing time, wide range of applications, perfect solution to bond plastics (PVC, PMMA, ABS, EPDM) and stainless steel |

*UV = 320 – 390 nm, VIS = 405 nm, RT = Room temperature

Perfect Curing of Adhesives and Sealing Compounds with High Performance UV Equipment by Hönle

Dr. Hönle AG is one of the world's leading suppliers of industrial UV technology. Innovative Hönle UV-systems have been applied worldwide - as gas-discharge lamps and also as LED-versions.

Hönle and Panacol attach great importance to joint research and development. They have combined their knowledge and extensive experience which has led to comprehensive high-tech solutions in medical engineering.

Hönle UV-Technology for Medical Applications

bluepoint LED eco

bluepoint LED eco has been developed for all applications requiring a most intensive UV irradiation. Thanks to its high intensity and the capability to program complete process sequences, e.g. exposure series with different intensities



bluepoint LED eco

and holding times, it is possible to realize very short cycle and machine throughput times, especially in fully automated production lines.

LED Powerline

LED Powerline is a high-performance array with all advantages of LED technology: LEDs have an extremely long lasting lifetime and do not require heating up or cooling phases.

LED Powerline is available in wavelengths of 365/385/395/405nm. This variety allows an exact adjustment of the wavelength to the respective application.

The LED array is available in different lengths from 80mm – in 40mm-steps variable – up to a length of > 1m.

New is a LED Powerline version with focusing lenses. They allow highest intensities, even if – due to the component architecture – only a larger distance between LED unit and component is possible. Thus the LED Powerline is perfect for applications like needle bonding.



LED Powerline

LED Spot 100

LED Spot 100 has been developed for all applications requiring a highly intensive UV irradiance over a large area, which can



LED Spot 100

optionally be enlarged by connecting several LED Spots 100 without gaps. The arrangement of the LEDs as well as an electronic power control guarantees a homogenous irradiation.

The recognition of LED-malfunction and a comprehensive monitoring function provide very high process stability.

LED Spot 100 is applied for manufacturing hearing devices or for tube bonding.

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