

Innovative Adhesives for Medical Applications

Panacol Vitalit®- and Structalit® Adhesives

Hönle UV-Curing Systems - bluepoint LED, LED Powerline, UVAPRINT HPV

Adhesives

- USP Class VI certified
- Solvent free and single component
- Fast curing with UV and Visible light
- Convenient handling and dosing
- Compatible with common sterilization processes

UV-Curing Systems

- Broadband UV/Visible spots and floods
- High UV-intensity
- Curable with UV-LED only, without generating-heat
- Easily adaptable to existing production lines
- Optimum quality, efficiency, and value

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

Panacol develops and produces cutting-edge adhesives for medical applications in a broad array of chemistries. This includes UV 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.

Complete Solutions for Your Assembly Process

Dr. Höhle Group offers compatible system technology i.e. Panacol high performance adhesives and complementing professional dispensing technology.

In addition perfectly matched UV- and LED devices manufactured by Dr. Höhle AG guarantee rapid bonding at optimum quality.

Höhle 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

Key Benefits of Panacol High-Tech-Medical-Adhesives

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

Custom Solutions for Unique Applications

Panacol provides an innovative solution for your application as well. We have the ability to develop custom formulations to meet your required adhesive performance properties.

For further information please contact our technical support team.



Adhesion Properties on Different Substrates

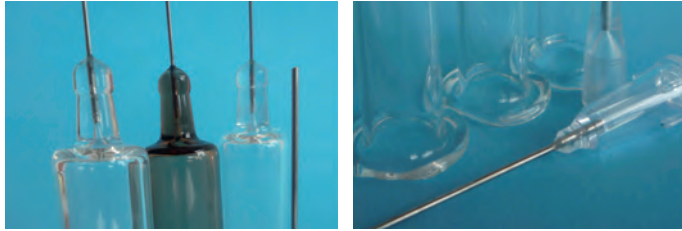
Adhesive	Vitalit											Structalit 701
	UV 4050	7041/F	7041 T	7090 VHS	7989	5140	1702	1703	6108	6108 T	7222	
PMMA	●	✓	✓	●	●	●	●	●	△	△	●	△
PC	✓	✓	✓	✓	✓	●	✓	✓	●	●	●	●
PVC-hard	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PET-A	●	✓	✓	●	●	●	△	△	△	△	●	●
PET-G	●	✓	✓	●	●	●	●	●	△	△	●	●
PUR	✓	✓	✓	●	✓	●	●	●	△	△	●	●
PS	✓	✓	✓	●	●	✓	●	●	△	△	●	●
PP	△	●	●	△	△	△	△	△	△	△	△	△
ABS	✓	✓	✓	✓	✓	✓	✓	✓	△	△	●	✓
SAN	✓	✓	✓	✓	✓	✓	✓	✓	△	△	●	●
Glass	✓	✓	✓	△	●	●	●	●	✓	✓	✓	✓
Steel	✓	✓	✓	△	●	●	△	△	✓	✓	✓	✓
Stainl.Steel	✓	✓	✓	△	●	●	△	△	✓	✓	✓	✓
Aluminum	●	●	●	△	●	●	△	△	✓	✓	✓	✓
Brass	△	●	●	△	●	△	△	△	✓	✓	●	✓

✓ very good ● application related △ surface pretreatment required

Adhesive Program at a Glance

Needle Bonding

- Vitralit® 7041/7041 T and UV 4050 are an excellent choice for metal-plastic bonding
- Vitralit® 6108/6108 T achieve optimum adhesion properties on glass and metal
- Safe and tension crack-free bonding
- High extraction force after autoclave sterilization ETO- and Gamma-radiation treatment



	Cyanolit 203 TX	Cyanolit 241 F	Cyanolit 732 F
Typical Applications	Tube Bonding, Large Gap Bonding, Porous Material	Plastics - Metal Bonding	Bonding of Colored Plastics, Delicate Bonding
Base	Cyanoacrylate	Cyanoacrylate	Cyanoacrylate
Viscosity (cP/MPas)	5,000 – 10,000	30 – 50	250 – 350
Shore Hardness	70 – 85 D	70 – 85 D	70 – 85 D
Max. Gap Width	3 mm	1 mm	1 – 1,5 mm
Typical Substrates	PA, PC, ABS, PVC, EPDM	PVC, PMMA, Copper, Al, Steel	PVC, PMMA, ABS, EPDM, Stainl. Steel
Special Properties	Gap Filling, Highly Viscous	Low Viscosity, Capillary Flow, Good Wetting Properties	Very Fast Setting Time, Wide Range of Applications

	Vitralit UV 4050	Vitralit 7041/F	Vitralit 7041 T	Vitralit 7090 VHS	Vitralit 7989	Vitralit 5140
Typical Applications	Needle Bonding, Plastics	Needle Bonding, Connector and Tube Fittings, Housing Bonding, Dialysis Filter	Needle Bonding, Tattoo Needles, Connector and Tube Fittings, Housing Bonding, Dialysis Filter	Catheter, Needle Bonding, Endoscope	PC-Container and Cover Bonding, Smear Brush	Coating of Electrical Components, Instruments, and Respiratory Mask Assembly
Base	Acrylate	Acrylate	Acrylate	Acrylate	Acrylate	Acrylate
Viscosity Brookfield LVT, 25°C [cP/mPas]	140 – 500	50 – 90	10,000 – 20,000	40 – 100	3,000 – 5,000	250 – 500
Tg (DSC) [°C]	35 – 45	32 – 42	38 – 47	60 – 80	37 – 47	1 – 10
Curing	UV- and Light Curing LED 365, 405	UV- and Light Curing LED 365, 405	UV- and Light Curing LED 365, 405	UV- and Light Curing LED 365, 405	UV-Curing, LED 365	UV- and Light Curing LED 365, 405
Color	Transparent, Yellowish	Transp., Slightly Yellowish	Transp., Slightly Yellowish	Transparent	Transp., Slightly Yellowish	Transparent
Shore Hardness	60 – 70 D	70 – 80 D	70 – 80 D	80 – 90 D	45 – 55 D	45 – 65 A
Certification	ISO 10993-5	USP Class VI	USP Class VI	USP Class VI	USP Class VI	USP Class VI
Special Properties	Excellent Adhesion on Plastics, Glass and Metal	Capillary Flow, Fluorescent under Black Light, Excellent Adhesion on Plastics, also on PP and POM	Excellent Gap Bonding, Very Good Adhesion on Plastics	Capillary Flow, Fluorescent under Black Light, Excellent Adhesion on Plastics, Fast Curing at Low Intensity	Flexible, Good Adhesion on Plastics	Highly Elastic

	Vitralit 1702	Vitralit 1703	Vitralit 6108	Vitralit 6108 T	Vitralit 7222	Structalut 701
Typical Applications	Tube Connectors, Back-Pressure Valve, Blood Filter	Tube Connectors, Back-Pressure Valve, Blood Filter	Needle Bonding, Glass Apertures	Needle Bonding, Glass Apertures	Electronic Component Assembly for Medical Equipment	Surgical Instruments, Endoscope, Optical Fibers
Base	Acrylate	Acrylate	Acrylate	Acrylate	1-part Epoxy	2-part Epoxy
Viscosity Brookfield LVT, 25°C [cP/mPas]	45 – 80	85,000 – 130,000	600 – 900	4,000 – 6,000	200 – 500	3,000 – 5,000
Tg (DSC) [°C]	75 – 85	80 – 90	45 – 70	45 – 70	50 – 56	110 – 120
Curing	UV-Curing, LED 365, 405	UV-Curing, LED 365, 405	UV-Curing, LED 365, 405 Thermal Cure at 150°C	UV-Curing, LED 365, 405 Thermal Cure at 150°C	UV-Curing, LED 365	2 K, Thermal Cure at 80°C - 200°C
Color	Transparent Amber	Transparent	Transparent	Transparent	Transp., Slightly Yellowish	Brown
Shore Hardness	65 – 80 D	75 – 80 D	75 – 85 D	75 – 85 D	77 – 82 D	80 – 90 D
Certification	USP Class VI	USP Class VI	Planned	USP Class VI	USP Class VI	Planned
Special Properties	Good Adhesion on Plastics, Capillary Flow, High E-Modulus	Good Adhesion on Plastics, Excellent Gap Filling, High E-Modulus	UV- and Thermal Curing (Dual Cure), Low Viscosity, Moisture-Resistant, Good Adhesion on Glass and Metal	UV- and Thermal Curing (Dual Cure), Excellent Gap Filling, Damp-Proof	Good Adhesion on Glass, Metal and Various Plastics	Good Temperature Stability, Thermal Cure, Good Adhesion on Steel and Plastics

Perfect Adhesive Curing and Sealing with UV High Performance Equipment from Dr. Höhle AG

Dr. Höhle AG is one of the world's leading suppliers of industrial UV technology. Innovative Höhle UV-systems have been applied - as gas-discharge lamps as also as LED-versions - in various manufacturing processes where they achieve excellent results worldwide – particularly in adhesive applications.

Höhle and Panacol, both members of the Höhle Group, attach great importance to joint research and development. They have combined their knowledge and extensive experience in chemistry and UV technology which has lead to comprehensive high-tech solutions.

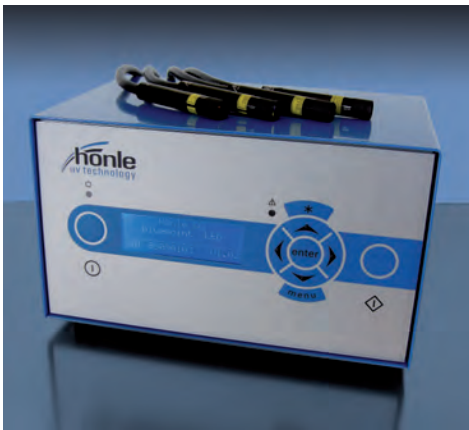
This has been applied to the specific needs associated with adhesive applications, frequently used in medical technology.

Höhle UV-Technology for Medical Applications

The Vitralit® adhesives from Panacol are perfect for medical glueing applications. The matching UV equipment to cure these high-tech adhesives are the bluepoint LED along with the LED Powerline and the UVAPRINT HPV from Höhle:

bluepoint LED

bluepoint LED has been developed for all applications requiring a most intensive UV irradiation. Thanks to its high intensity and the possibility to program complete process sequences, e.g. exposure series with different intensities and holding times, it is possible to realise shortest cycle and machine throughput times especially in fully automated production lines.

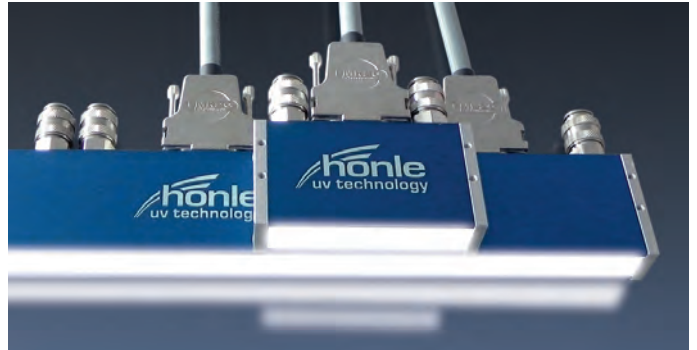


bluepoint LED

LED Powerline

The LED Powerline is a high-performance array with all the advantages of LED technology: Extremely long lasting lifetime and they do not require heating up or cooling phases.

The LED Powerline is available in wavelengths of 365/375/ 385/ 395/405nm. This variety allows adjustment of the wavelength to the appropriate application. The LED Powerline is available in different lengths from 80mm - in 40mm steps variable up to a length > 1m.



LED Powerline

UVAPRINT HPV

A compact high-intensity UV curing unit with CAD-designed reflector geometry guaranteeing optimum UV yield.

Spectra and arc lengths are easily adapted for different applications by just changing the lamp.

UVAPRINT HPV is used for curing UV reactive adhesives, compounds, plastics, inks and lacquers.



UVAPRINT HPV

höhnlegroup

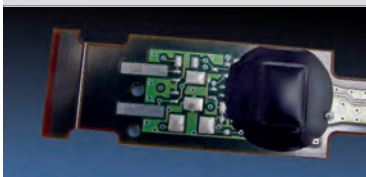
Dispensing

Curing

UV-adhesives

Conductive adhesives

Potting



aladin

elco-efd



eltosch

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mitronic



panacol

printconcept



uv-technik speziallampen

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