

Elecolit®
Electrically and thermally conductive adhesives

System properties

- TCA thermally conductive adhesives
- ICA isotropic adhesives
- ACA anisotropic adhesives
- Flame-retardant products
- 1k and 2k epoxies

Advantages

- Suitable for small- and large-series production
- Processing with dispenser in screen printing and pin transfer
- UV-curing or curable at room and/or high temperature
- Simple processing

Elecolit® conductive adhesives – always the right bond...

Elecolit® is our range of electrically and thermally conductive adhesives.

The Elecolit® products are a progressive solution to current issues in many fields of application.

Elecolit® conductive adhesives are synthetic resins filled with metallic or inorganic filler materials.

- ICA isotropic adhesives
- TCA thermally conductive adhesives
- ACA anisotropic adhesives
- Flame-retardant products

1K products for RT curing

Benefits: simple processing through dispenser, screen printing or needle transfer – no mixing needed.

2K products

Benefits: long shelf life, curing at room temperature possible, very short curing times possible at higher temperatures, low-viscosity settings possible.

Electrically conductive

Electrically conductive products usually contain metallic fillers such as palladium, gold, silver, copper, nickel or graphite. The more filler the product contains, the higher is its conductivity.

Applications

- Die bonding
- Aerial contacting
- Flip-chips
- Anisotropic bonds
- HF screening
- 3D-MID

Advantages compared to other techniques:

- Lead- and solvent-free
- Curing at low temperatures < 200 °C
- No change to your process setup
- High flexibility at temperature shock
- High thermal stability
- No bleeding



Electrically conductive							
Elecolit®	3024	3012	3043	3423	3061	3653	3063
Typical applications	Heat-sensitive components	Chips & electrical/electronic components	Antenna printing, ceramic fuses	Flexible component bonds	LCD, flexible circuits	Flexible component bonds	Flexible circuits
Base	2k epoxy	1k epoxy	1k epoxy	2k epoxy	1k epoxy	1k epoxy	1k UV acrylate
Viscosity (mPas)	2800	Viscous	4000 - 5000	Viscous	35000 - 45000	8000-10000	Thixotropic
Curing	15 min at 120 °C	10 min at 150 °C	10 min at 150 °C	5 min at 150 °C	10 s at 150 °C	5 min at 150 °C	1 min at 200 mW/cm² + 40 N
Temp. resist. (°C)	-40 to +150	-40 to +200	-40 to +180	-60 to +175	-40 to +180	-40 to +180	-40 to +150
Contact resistance ohms x cm	0.0005	0,013	0,015	0,0002	0.0001	0,005	0,001
Characteristics	Snap cure at high temperatures; pot life: 8 h, cures at as low as 80 °C	Dispenser, screen printing, good conductivity, good gap-filling capacity	Very low viscosity, good dispensability, small fillers Ag<10 µ, low ion content	Flexible variant of Elecolit 323, curing from 80°C, pot life 2 days, good dispensability	Anisotropic electrically conductive, ion pureness < 10 ppm	Highly flexible, temperature-, vibration- and impact-resistant, good dispensability	Anisotropic, UV-curing, for transparent film with printed conductive paths, highly flexible

Electrically conductive							
Elecolit®	312	323	325	327	336	342	414
Typical applications	Electrical/electronic engineering, screen printing	Component bonding/ electronics	Heat-sensitive components	High-temperature range	Heat-sensitive components	Electrically conductive contacts, HF shielding	Flexible conductive paths on film
Base	1k epoxy	2k epoxy	2k epoxy	1k polyamide	2k epoxy	1k acrylate	1k polyester
Viscosity (mPas)	Firm paste	45000	Viscous	8500	Viscous	1000-2000	20000-25000
Curing	5 min at 180 °C	4 min at 150 °C	5 min at 150 °C	1 h at 150 °C	5 min at 150 °C	10 min at 120 °C	5 min at 150 °C
Temp. resist. (°C)	-40 to +150	-60 to +175	-40 to +150	-40 to +275	-40 to +150	-40 to +150	-55 to +200
Contact resistance ohms x cm	0.005	0,0002	0.0005	0.0001	0.001	0.001	0.0005
Characteristics	Viscous filler, does not bleed, for large gaps, stable edges	Pot life 96 hours, cures at low temperatures, suitable for semi-conductors, good dispensability	Short timers at high temper., dispensers, printing and screen printing, very good conductivity	High electrical & thermal conductivity, good on gold, aluminium, tanatal, germanium and ceramics	Cures at room and low temper., dispenser, printing and screen printing, inexpensive	Latex-like film, low mech. strength, good adhesion to many substrates, curing at room temp. possible	Extremely flexible, very good conductivity, can be kinked and crumpled, abrasion-proof

Thermally conductive

The best thermal conduction coefficients can be achieved with metallic fillers. They also make the adhesive electrically conductive, which is undesirable for some applications and should be verified before use.

Applications

Applications that release heat energy:

- Bonding of power modules
- Spacers for coating thickness testing
- Bonding of heat sinks

Advantages compared to other techniques:

- Simultaneous dissipation of the high thermal energy and fixing/mounting in contrast to pastes
- Solvent-free
- Fast curing
- High ion pureness
- 1K, simple processing

Processing

Elecolit® products are versatile and reliable, even under extreme conditions.

- Suitable for small- and large-series production
- Processing with dispenser, screen printing and pin transfer

System solutions

Panacol-Elosol also supplies suitable processing equipment for your applications, such as heat-sealing presses.

Leading the field through innovation and research:

We continually develop and improve our proven Elecolit® range.

Working both in our own laboratories and on ongoing research projects in close cooperation with renowned institutes and leading partners in industry. We are continually developing progressive solutions for new applications.

Thermally conductive							
Elecolit®	6041	6601	6616	6207	6603	6604	
Typical applications	Materials with various degrees of heat expans.	Heat sinks, sensors	Sealant for hardening at room temp	Capsule and sealant	Bonding magnets and heat sinks	Sensors for measuring instruments	
Base	1k epoxy	1k epoxy	2k epoxy	2k epoxy	1k epoxy	1k epoxy	
Viscosity (mPas)	Viscous	12000-20.000	Viscous	9000-12000	95000-115000	110.000-140.000	
Curing	30 min at 150 °C	20 min at 150 °C	2 h at 80 °C	2 h at 65 °C	20 min at 150 °C	10 min at 150 °C	
Temp. resist. (°C)	-40 to +150	-40 to +200	-50 to +150	-55 to +110	-40 to +200	-40 to +200	
Heat conductivity (W/mK)	1,04	1,05	1,01	0,9	1,3	1,05	
Characteristics	Thixotropic, low water absorption, low shrinkage, good heat transmission	Very good adhesion to metals, good flow behaviour, high strength, good dispensability	Pot life 45 min, flexible at low temperatures, vibration- and impact resistant, visco-plastic	Low viscosity, flame-retardant, low shrinkage, pot life 2 hours, UL 94 Vo	Somewhat flexible, impact- and temperature-resistant, high viscosity	Low heat expansion, good measured value transmission, high viscosity	

In addition we offer silicones with an excellent thermal conductivity of 4.5 W/mK

With Momentive Performance Materials – one of the world's most innovative silicone manufacturers – as their sales partner, we can offer a wide range of additional products:

- Silicone rubber
- Sealing compounds and adhesives
- Emulsions
- Coatings and sealants
- Liquid silicone and gels

Our special additional products for specific applications:

Vitalit® UV-curing conductive adhesives

Electrically conductive

- Nanostructured fillers
- Fast curing
- High ion pureness

Thermally conductive

- High thermal stability
- Fast curing



MOMENTIVE
performance materials

UV lamps and UV LEDs

Hönle UV lamps

are the ideal addition to, for example, our UV products and are ideally suited for curing adhesives, coatings, sealants and paints.

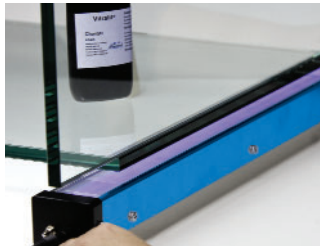
- UV hand lamps
- UV point sources
- UV flood lamps
- UV conveyors

Handy and compact, suitable for mobile and stationary systems, with a homogeneous intensity distribution.



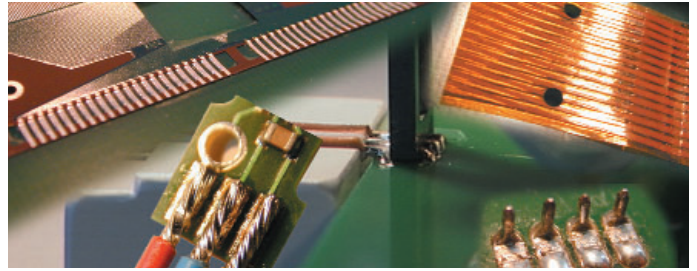
Hönle UV LED lamps

UV LED arrays and UV LED flood lamps: the innovative UV technology that cures without heat generation! Ideal in combination with the specially developed Panacol UV LED adhesives.



The Hönle UV LED arrays are available in a range of lengths and provide an even energy density over their whole length.

Heat sealing and hot bar soldering



Heat-sealing press: regulates time, temperature and pressure according to substrate. Processing at low temperature with pulsed heater.

Hot bar soldering machines: intelligent, innovative systems, typical applications include:

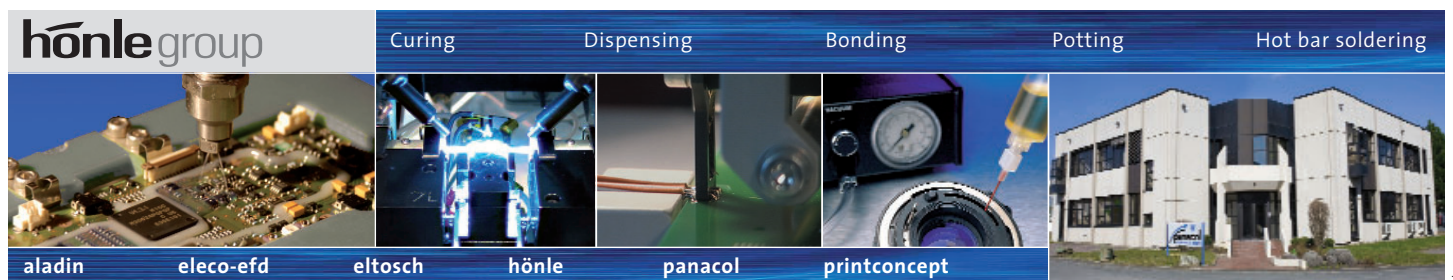
- Flatpacks, TABs, SMD
- LCD applications
- Bonding of sensitive components
- Cords soldering to PCBs
- Pin soldering

Dispensing devices

We have the perfect dispensing devices for all your needs – from standard machines to highly specialised equipment. Ideal for precisely metered application of various low- and high-viscosity materials and a wide range of accessories.



You can find further information about our product groups in our special product data sheets. For our comprehensive range of accessories for each product series, please ask for our detailed information sheets.



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