

# Technical Datasheet

## Elecolit® 414



### Product Description

**Modified epoxy | 1 C | thermal-curing | thermally conductive**

- ▶ Coating component
- ▶ Electrostatic discharge
- ▶ Flexible
- ▶ Good chemical resistance
- ▶ Elastic
- ▶ Resistant to abrasion
- ▶ Solvent-based

### Curing Properties

This adhesive can be cured with heat. Typical curing temperatures are listed in the table below.

Temperatures	Time
70°C	16 min
125°C	8 min
150°C	5 min

The heat cure times are only provided as a guideline. They are derived from curing a 2g adhesive sample without affixed substrates in a laboratory environment. Actual cure times can vary based on part size, configuration, adhesive volume, temperature control, and the time required for the component substrates to attain oven temperature.

The final bond strength of the adhesive is achieved no sooner than 24 h after the bonded components are removed from the oven.

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Resin	Polyester
Appearance	Grey
Filler	Silver
Filler - weight [%]	87
Particle size D95 [µm]	16

### Uncured Material

Viscosity [mPas] (Brookfield LVT, 25 °C, Sp. 4/6 rpm) <i>PE-Norm 001</i>	20,000 – 25,000
Viscosity [mPas] (Kinexus Rheometer, 25 °C, 10s <sup>-1</sup> ) <i>PE-Norm 064</i>	6,000 – 15,000
Thixotropic index [1/10] <i>PE-Norm 064</i>	2.5 – 4.0
Density [g/cm <sup>3</sup> ] <i>PE-Norm 004</i>	2.1 – 2.4
Flash point [°C] <i>PE-Norm 050</i>	>58
Working life [h] <i>@ room temperature</i>	6

### Cured Material

Temperature resistance [°C]	-55 – 200
Glass transition temperature - DSC [°C] <i>PE-Norm 009</i>	20 – 25
Coefficient of thermal expansion [ppm/K] below Tg <i>PE-Norm 017</i>	50 – 90
Coefficient of thermal expansion [ppm/K] above Tg <i>PE-Norm 017</i>	130 – 200
Thermal conductivity [W/m*K] <i>PE-Norm 062</i>	3 – 4
Thermal conductivity [W/m*K] <i>PE-Norm 054</i>	7.5 – 9.8
Volume resistivity [Ohm*cm] <i>PE-Norm 040</i>	1E-4 – 1E-5

### Transport/Storage/Shelf Life

Package type	Transport	Storage	Shelf life*
Syringe/Cartridge	-20°C	-20°C	At delivery min. 6 months max. 12 months
Other packages	At room temperature max. 25°C	0°C – 10°C	

**\*Store in original, unopened containers!**

### Instructions for use

After storing the container at 0°C - 10°C, Elecolit® 414 must be homogenized because of possible sedimentation of silver.

The thawing time before use is approx. 1 hour for 30cc cartridges. Condensation should be avoided during the thawing process. After thawing once, Elecolit® 414 should not be frozen again. Elecolit® 414 must be stored vertically with the cartridge tip pointing downwards.

### Surface preparation

The surfaces to be bonded should be free of dust, oil, grease, mold release, or other contaminants in order to obtain an optimal and reproducible bond. For cleaning we recommend the cleaner IP® from Panacol, or a solution of Isopropyl Alcohol at 90% or higher concentration. Substrates with low surface energy (e.g. polyethylene, polypropylene) must be pretreated in order to achieve sufficient adhesion.

### Application

Our products are supplied ready to use. Depending on the packaging, our adhesives may be dispensed by hand directly from the package, or they can be applied using dispensing systems and automation. Many commercially available valve and controller options are available to ensure accurate and consistent adhesive dispensing. For assistance with dispensing and curing questions, please contact our Applications Engineering department. Adhesive and substrate should not be cold for proper bonding. They must be allowed to warm to room temperature prior to processing. After curing, the adhesive must be allowed to cool to ambient temperature before testing the product's performance. For safety information refer to our Material Safety Data Sheet (MSDS).

### Storage

Store uncured product in its original, closed container in a dry location. Any material removed from the original container must not be returned to the container as it could be contaminated. Panacol cannot assume responsibility for products that were improperly stored, contaminated, or repackaged into other containers.

### Handling and Clean-up

For safe handling information, consult this product's Material Safety Data Sheet (MSDS) prior to use. Uncured material may be wiped away from surfaces with organic solvents. Do not use solvents to remove material from eyes or skin!

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### Disclaimer

The product is free of heavy metals, PFOS and Phthalates and is conform to the current EU-Directive RoHS.

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