

Preliminary Technical Data Sheet

Elan-glue®

EP 5620

Electronic Adhesive

Modified Epoxy - One Component - Heat Cure
High Thermal Resistance - Transparent

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Product

Elan-glue® EP 5620 represents a thermal cure, low viscous, unfilled, solvent-free, single component formulation based on epoxy resin. Elan-glue® EP 5620 is suitable for a large range of adhesive applications. The cured material provides an excellent adhesion to common substrates. The product satisfies the requirements of RoHS.

Areas of application

Elan-glue® EP 5620 is intended to serve the electronic and automotive industry. Elan-glue® EP 5620 has been designed to provide a tough, high temperature resistant, moisture and chemical resistant adhesive. The cured product is semi flexible and will not damage sensitive components under thermal stress, including low temperatures. The low viscosity of the liquid base material, the transparency, the hardness and the high T_g of the cured material enables additional adhesive applications.

Underfill and Globe Top on small surface mount components (SMC) are possible using ELAN-glue® EP 5620. Micropotting and thin layer coating of small components and sensors has been explored. In alternative applications ELAN-glue® can be used to provide a type of soldering between two different types of polymers and combine the same similar to a welding process.

Properties

- Heat Cure
- Temperature Resistance -40 to +130°C
- Short Temperature Resistance up to 160°C
- Good Adhesion
- Good Dielectric Properties
- VOC-free
- Low Viscosity
- RoHS compliant

Storage and Stability

Elan-glue® EP 5620 is a cooled product supplied in syringes in sealed packages or air and light tight cans. The product should be stored at a temperature below 5 °C in its original sealed container to avoid any potential contamination and ensure shelf-life of six months. Shelf life at 23 °C is three months. Freezing the product may extend the shelf live beyond 6 six months. Store accordingly to any specific instruction listed on the product label. Product should be used prior to the expiry date marked on the label.

Preparation

The packages should be allowed to reach their application temperature, 25 to 30 °C, before use to allow the viscosity to reach the specified level. The components to be bonded should be clean dry and free from grease and compatibility between the resin and all materials should be checked prior to use.

Processing

Elan-glue® EP 5620 should be applied directly from the packages. ELAN-glue® EP 5620 can be applied by automated robot systems nozzles for dispensing or jetting, manual application by brushing is also possible. Inspection of the bonded area is possible due to its fluorescent under UV light.

Upon cure, Elan-glue® EP 5620 releases a high amount of energy. To obtain the desired product cure temperature and time needs to be adjusted to the amount and layer thickness of adhesive applied as well as the capacity of the substrates to absorb the heat during cure.

Curing

Successful cure schemes are as manifold as the types of substrates and application layers possible with this product.

As examples the following regimes of cure had been explored successfully:

- 100 µm on steel 30 min @90°C
- 4 mm on aluminium 4 h 65°C + 4 h 90°C
- 8 -18 min 130°C welding PET/PA66

Table 1 - Typical properties of Elan-glue® EP 5620

Property	Condition	Value	Unit
Colour		Colourless	
Viscosity (DIN 53019) D=100s ⁻¹	23°C	400 ± 250	mPas
Viscosity (DIN 53019) D=3s ⁻¹	23°C	800 ± 300	mPas
Specific gravity (DIN EN ISO 2811-1)	20°C	1.15 ± 0.05	g/cm ³
Shelf Life	5 °C	6	Months

Table 2 – Thermal Properties of cured compound (4 h @65°C, 19 h @90°C)

Property	Condition	Value	Units
Temperature Resistance (IEC 60216)		≤ 130	°C
CTE (T _g -20°C)	α1	80	10 ⁻⁶ /K

Table 3 - Mechanical properties of cured compound

Property	Condition	Value	Units
Hardness, (DIN 53505)	25°C	80	Shore D
Glass transitions temperature (T _g), TMA	4 h 65°C + 19 h 90°C	125 - 140	°C

Our advice in application technology given verbally, in writing and by testing corresponds to the best of our knowledge and belief, but is intended as information given without obligo, also with respect to any protective rights held by third parties. It does not relieve you from your own responsibility to check the products for their suitability to the purposes and processes intended. The application, usage and processing of the products are beyond our reasonable control and will completely fall into your scope of responsibility. Should there nevertheless be a case of liability from our side, this will be limited to any damage to the value of the merchandise delivered by us. Naturally, we assume responsibility for the unobjectionable quality of our products, as defined in our General Terms and Conditions