

EN

Preliminary Technical Data Sheet

Elan-glue®**AC 1611**

Electronic Adhesive

Modified Acrylic - One component - UV Cure
Optically Clear - Semi-Rigid

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Description

Elan-glue® AC 1611 represents a single component, solvent free, low viscous formulation based on acrylate resin. After cure by UV-light Elan-glue® AC 1611 forms an optically clear, colorless, semi-rigid material suitable for a wide range of adhesive applications. This product satisfies the requirements of RoHS.

Areas of application

Elan-glue® AC 1611 has been designed to provide the electronic industry with a low viscous, UV curing adhesive suitable to bond components in electronic applications such as electronic boards.

Elan-glue® AC 1611 provides a low viscosity and an excellent wettability and adhesion to glass and glass/metal combination.

The material has also proven good performance in gluing large area of glass/glass and glass/metal components in the range of square-meters.

The applied material will remain in place during cure and can be cured in a layer thickness up to several millimeters. It shows an excellent stability against UV-radiation.

Properties of cured product

- High depth of cure in mm-range
- Semi-rigid / medium hard
- Stable thermal expansion from -40°C - 140°C
- Rapid curing by UV-radiation
- Good adhesion to many substrates
- Proven good adhesion to metal, glass, PC and PMMA
- Low cure shrinkage

Storage and stability

Elan-glue® AC 1611 is supplied in sealed packages. The product should be stored at a temperature between -10°C and +25°C in its original sealed container to avoid any potential contamination.

Protection against any kind of UV is essential. Store according to any specific instruction listed on the product label. Product should be used prior to the expiry date marked on the label.

Preparation

Prior to application of Elan-glue® AC 1611, as for any other adhesive, appropriate pre-conditioning of the substrate surface is recommended. Such procedures could include cleaning and/or activation. In any case the surface must be dry, free from traces of oil and dust to provide fully satisfactory results. Being an UV-curing material, the material should be handled under yellow-light conditions. Preliminary tests of compatibility are highly recommended.

Processing methods

Elan-glue® AC 1611 should be applied directly from the packages with a suitable application system.

If Elan-glue® AC 1611 is transferred to a second package or applicator it must be protected against UV-light. Any UV-light will start the cure reaction willingly or unintentionally. 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.

Curing/Post-curing

Mercury-Halogen-UV-Lamps as well as LED with 365 nm have shown capacity to cure Elan-glue® AC 1611.

Typical protocol with proven success has been 10 seconds using an UV-lamp supplying UV-radiation between 350 nm and 420 nm and an energy density of approximately 60 to 70 mW/cm². Increased UV-energy reduces the cure time.

A thermal post treatment may improve the adhesion further.

Handling precautions

Refer to the safety data sheet and comply with regulations relating to industrial health and waste disposal.

Sales specifications

Properties	Conditions	Test Method	Value	M/U
Viscosity	25 °C	DIN 53019 (Internal Test V18/b/c)	200 ÷ 600	mPa·s

Typical system properties

Properties	Conditions	Test Method	Value	M/U
Shelf life	-10 °C to 25 °C	Internal Test	6	months
Density	25 °C	ISO 2811-1 (Internal Test S12)	1,06 ÷ 1,10	g/cm³

Typical mechanical properties of the cured product

Properties	Conditions	Test Method	Value	M/U
Hardness Shore A/1	23 °C	ISO 868 (Internal Test M30b)	55 ÷ 65	Shore A
Shear resistance	23 °C - Polycarbonate	ISO 527-2 / ISO 37 (Internal Test M29b)	2,4 ÷ 3,0	N/mm²

Typical thermal properties of the cured product

Properties	Conditions	Test Method	Value	M/U
Temperature range		Internal Test	-40 ÷ +140	°C
Linear expansions coefficient	-30 °C to +140 °C	TMA (Internal Test M56)	200 ÷ 250	ppm/K
Glass transition temperature (Tg)		DMA	30 ÷ 50	°C

Typical chemical properties of the cured product

Properties	Conditions	Test Method	Value	M/U
Water Absorption	23 °C / 24 h	DIN EN ISO 62 (Internal Test M09a/b)	2,5 ÷ 2,8	%
	100 °C / 0,5 h		2,3 ÷ 2,6	%

Typical dielectric properties of the cured product

Properties	Conditions	Test Method	Value	M/U
Volume resistivity	25 °C - Initial value	IEC 60464 -2 (Internal Test M5)	$> 10^{13}$	$\Omega \cdot \text{cm}$
	25 °C - After 7d water immersion		$> 10^{12}$	$\Omega \cdot \text{cm}$
Dielectric Strength	23 °C - 1mm foil / sphere against plate	IEC 60455-2 (Internal Test M31)	21 ÷ 27	kV/mm
Dielectric constant at 10 kHz	24 °C	IEC 60250 (Internal Test M03b)	6,3	
	201 °C		6,3	
Dielectric dissipation at 10 kHz	24 °C	IEC 60250 (Internal Test M03b)	< 0,03	
	201 °C		< 0,04	
Volume resistivity at temperature	24 °C	IEC 60464 (Internal Test M13)	$> 10^{13}$	$\Omega \cdot \text{cm}$
	201 °C		$> 10^{10}$	$\Omega \cdot \text{cm}$

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