



A535-TXS

UV-Snap cure adhesive (updated 012417)

PRODUCT DESCRIPTION:

- Base chemistry: epoxy only, cationic polymerization
- Bond opaque and/or temperature sensitive substrates. The adhesive is activated with a short UV cure. The UV activated adhesive is liquid for some seconds. The substrates are mated and held in alignment. A second UV cure step sets the alignment, and a thermal cure step of 30 minutes at 80 °C (or 50 minutes at 70 °C or 120 minutes at 60 °C) cures all adhesive in shaded areas.

PRODUCT USE:

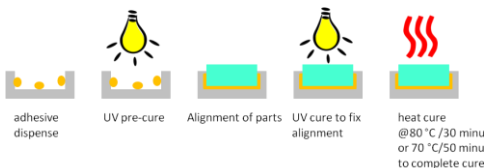
- Active alignment of components for optoelectronics and semiconductor packaging
- High precision bonding

FEATURES:

- High adhesion, high Tg, room temperature stable, not sensitive to oxygen in cure process, excellent reliability performances, robust for solder reflow process

INSTRUCTIONS FOR USE:

- 1) Dispense adhesive
- 2) Pre-cure: LED-365 nm or UV-A (315 to 400 nm) metal halide or mercury UV light source at low UV dose activates the adhesive.
- 3) Mating and alignment step: depending on the pre-cure dose, an OPEN TIME of seconds is available for mating and alignment of substrate 2
- 4) Fix cure: a second UV dose fixes the aligned substrates. This fix cure step is optional if active alignment is not necessary.
- 5) Thermal cure: a thermal cure at 60-80°C for 30-120 minutes ensures full curing of all adhesive in shaded areas.



CURING CONDITIONS:

<u>LED-365 nm light source</u>		<u>Metal Halide or Mercury UV light source (UV-A: 315-400 nm)</u>	
1) Pre-cure vs. open time relation		1) Pre-cure vs. open time relation	
Pre-cure dose	Open time	Pre-cure dose	Open time
2,000 mJ/ cm ²	60 sec	350 mJ/ cm ²	60 sec
3,000 mJ/ cm ²	45 sec	700 mJ/ cm ²	45 sec
4,000 mJ/ cm ²	35 sec	1,400 mJ/ cm ²	20 sec
5,000 mJ/ cm ²	25 sec		
2) Second LED-365 nm cure at 5,000 to 10,000 mJ/ cm ² to fix the aligned parts		2) Second UV cure at 2,000 to 3,000 mJ/ cm ² to fix the aligned parts	
Recommended LED-365 nm lamp intensity: 100 to 300 mW/ cm ²		Recommended UV light intensity: 50 to 200 mW/ cm ²	
4) Thermal cure conditions:			
60 °C for 90 to 120 minutes		70 °C for 30-60 minutes	
90 °C for 15 to 30 minutes		110 °C for 5-15 minutes	
		80 °C for 30 to 45 minutes	
		120 °C for 5 to 15 minutes	
Optimization of pre-cure UV dose is required for obtaining the desired bond strength. The components to be bonded must be mated immediately after pre-cure and within the open time period. If the components are not mated during the open time, the liquid adhesive will solidify and complete wetting of the bonded substrates will not be possible, leading to poor bonding force.			

TYPICAL PROPERTIES

Uncured resin

Viscosity at 25 °C, mPa.s or cps (shear rate: 10/s)	8,000 to 10,000
Thixotropic index (shear rate: 1/s over 10/s)	3
Appearance of cured adhesive	yellow to amber or tan
Density (g/mL)	1.2

Cured film

Outgas, weight % (per Telcordia GR-1221)	0.13
Outgas, weight % (per MIL-STD 883/5011)	0.19
Water permeability (g/m 24 hrs, 50 °C/95% RH, 75 µm film)	2.2 x 10 ⁻⁴
Shrinkage (linear, %)	< 0.3
Hardness – Shore D	80-85
Glass transition temperature (DMA, °C)	160
Coefficient of thermal expansion (DMA)	
below Tg (x10 ⁻⁶), °C ⁻¹	40
above Tg (x10 ⁻⁶), °C ⁻¹	170
Physical properties tested at 25°C, 50% RH (ASTM D638)	
Tensile strength, MPa	170
Elongation (%)	5
Young's Modulus, MPa	2,300
Operating temperature, °C	-40 to 150

GENERAL USAGE INFORMATION:

- Shipment:** no restriction on shipment and no cold shipment is needed
- Storage:** After the adhesive is received in black syringes or amber HDPE bottles, room temperature storage (15-30°C) in the original container is required.
- Shelf life (20 - 25°C):** 6 months
- Working life (20 - 25°C):** 3 months

SAFETY AND HANDLING

The uncured adhesive can be cleaned from apparatus with isopropyl alcohol (IPA), methyl ethyl ketone (MEK), or commercial alcohol based cleaning solution. Avoid direct skin and eye contact. Use only in well ventilated areas. Use protective clothing, gloves and safety goggles. Read [Material Safety Data Sheet](#) before handling.

The information presented here represents our best available information and is believed to be reliable, but it and does not constitute any guarantee or warranty. Inasmuch as Addison Clear Wave has no control over the exact manner in which others may use this information, it does not guarantee the results to be obtained. Nor does the company make any expressed or implied warranty of merchantability, or fitness for a particular purpose concerning the effects or results of such use. Purchasers are further responsible for determining the suitability of the product for its intended use and the appropriate manner of utilizing the production processes and applications so as to ensure safety, quality and effectiveness. Addison Clear Wave makes no warranties and assumes no liability in connection with the use or inability to use this product. V5012017