



# A535-AF2

## UV-curable Adhesive

### PRODUCT DESCRIPTION:

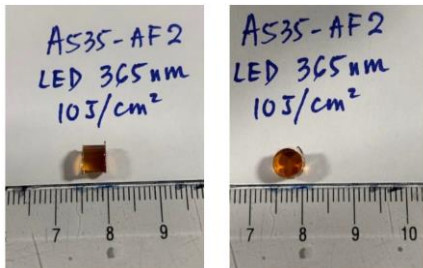
- Base chemistry: epoxy only, cationic polymerization
- One component ready for use, solvent-free, UV cureable.

### PRODUCT USE:

- Bonding glass to glass or glass to metal or glass to ceramic.
- Optoelectronics: fiber to v-groove, lens bonding
- Semiconductor: lens or prism to substrates

### FEATURES:

- High adhesion, high Tg, long shelf & working life, room temperature stable, not sensitive to oxygen in cure process, excellent reliability performances, robust for solder reflow process
- Antimony Free
- High depth of cure
- Depth of cure: 5 mm



**SAMPLE SIZE:** A535-AF2 was designed for high depth of cure at large resin volume. Recommended cure depth: 1 mm to 5 mm; recommended width or diameter 1mm to 5 mm. If your dimension need is thin film, please contact us for recommendation for epoxy adhesive for thin film.

### UV CURING CONDITIONS:

- UV Metal Halide or Mercury UV light source with UV-A (320-400 nm) with UV light intensity: 100 to 1,000 mW/ cm<sup>2</sup>
- LED-365 nm with UV light intensity: 300 to 1,000 mW/ cm<sup>2</sup>

LED-365 nm		Metal Halide/Mercury(UV-A: 320-400 nm)	
UV intensity(mW/cm <sup>2</sup> )	time (sec)	UV intensity(mW/cm <sup>2</sup> )	time (sec)
400	25 sec or more	or 400	25 sec or more
or 500	20 sec or more	or 500	20 sec or more
or 1,000	10 sec or more	or 1,000	10 sec or more

- Thermal post cure at 80 to 100°C for 30 to 60 minutes will promote full cure and improve adhesion of bonded parts
- The recommended UV cure dose is at the adhesive. If the substrates absorb curing light, then the actual cure dose needs to be increased.
- If the cure film thickness or dimensions are smaller than specified above, high cure dose or longer cure time will be required.

### TYPICAL PROPERTIES

#### Uncured resin

Viscosity (cps, 25 °C)	3,000 to 4,100
Density (g/mL)	1.1
Storage (°C)	15 – 25
Shelf life (15 - 25 °C)	6 months
Working life (15 - 25 °C)	3 months

#### Cured film

Outgas, weight % (per MIL-STD 883/5011)	0.04
Outgas, weight % (per Telcordia GR-1221)	0.02
Water absorption (% , 100 °C until saturation)	0.2
Water permeability (g/m 24 hrs)	2.7 x 10 <sup>-4</sup>
(50 °C/95% RH, 75 µm film)	

Shrinkage (linear, %)	< 0.2
Hardness – Shore D	80
Glass transition temperature (DMA, °C)	166
Dielectric Strength (estimated, kV/mm)	20-25
Refractive index of cured film (25°C)	
@ 589 nm	1.578
@ 1310 nm	1.562
@ 1550 nm	1.558

Coefficient of thermal expansion (DMA by compression), 4-5 mm thick sample	
below Tg (x10 <sup>-6</sup> ), °C <sup>-1</sup>	28
above Tg (x10 <sup>-6</sup> ), °C <sup>-1</sup>	82

#### Physical properties tested at 25°C, 50% RH (ASTM D638)

Tensile strength, MPa	58
Elongation (%)	9
Young's Modulus, MPa	2,200
Operating temperature, °C	-40 to 200

### INSTRUCTIONS FOR USE:

- 1) Clean the substrates to remove contamination, dust, moisture, salt and/or oil
- 2) Dispense adhesive on substrates
- 3) UV cure to bond
- 4) Thermal post cure to enhance adhesion and full cure.

#### 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.

#### 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.

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