



## Light- and/or Heat-Curable Materials for Automotive Camera Module Assembly

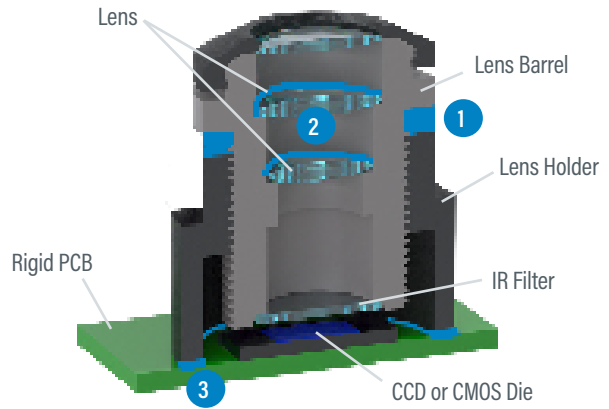
- One-component formulations
- Solvent free and environmentally friendly materials
- Excellent adhesion to commonly used substrates in camera module assemblies
- Materials cure in seconds allowing faster processing and higher throughput
- Materials available for a variety of applications including active alignment, and barrel fixturing
- Very low shrinkage with excellent resistance to moisture and shock
- On-demand cures for a more efficient process
- Materials formulated with secondary heat- or moisture-cure for shadow areas available
- Possible to set up for in-line production processes
- Greater output and lower processing costs

Dymax light-curable adhesives are ideal for camera module assemblies found in passenger vehicles, trucks, off-road vehicles as well as in many other transportation-related applications. The adhesives cure on-demand in seconds with light, providing greater product yields in a much shorter assembly time. Materials are also available with secondary heat or moisture cure to accommodate designs with shadow areas.

Dymax materials are one-component, requiring no mixing, and solvent-free for a more environmentally friendly process. They provide excellent adhesion to substrates typically used in the manufacture of camera modules and electronic device housings, and can withstand harsh conditions like temperature extremes, moisture, shock, and corrosive chemicals which automobiles are often exposed to.

## Typical Automotive Camera Module Applications

- 1 - Bonding the lens barrel to holder
- 2 - Lens bonding
- 3 - Bonding the lens holder to the flexible and/or rigid PCB



Product Number	Features	Viscosity, cP	Durometer Hardness	Tensile at Break, MPa [psi]	Modulus of Elasticity, MPa [psi]	Shrinkage, %
<b>Positioning Adhesives</b>						
9801	UV/Visible light cure and/or heat cure epoxy; low shrinkage; moisture and thermal cycle resistant; cold storage/cold ship; low temperature heat cure	60,000	D90	45 [6,600]	1,600 [230,600]	1.5 Volumetric
9802	Developed with a high thixotropic and recovery ratio; UV/Visible light cure and/or heat cure epoxy; low shrinkage; moisture and thermal cycle resistant; cold storage/cold ship; low temperature heat cure	60,000	D90	65 [9,500]	5,100 [740,000]	2.2 Volumetric
9803	Very low volumetric shrinkage and water absorption; greater depth of cure; UV/Visible light cure and/or heat cure epoxy; low shrinkage; moisture and thermal cycle resistant; cold storage/cold ship; low temperature heat cure	86,000	D94	36.7 [5,328]	3,983 [578,000]	1.1 Volumetric
<b>Plastic/Structural-Bonding Adhesives</b>						
6-621	UV/Visible light cure with secondary heat cure; activator cure; hard, clear bonds; bonds multiple substrates	800	D80	22 [3,200]	550 [80,500]	0.4 Linear
3094-T-REV-A	Low stress plastic bonder; UV/Visible light cure; low shrinkage	11,750	D65	14 [2,800]	698 [101,300]	0.7 Linear
3094-GEL-REV-A	Low stress plastic bonder; UV/Visible light cure; low shrinkage	30,000	D67	12.4 [1,800]	179 [26,000]	0.5 Linear
<b>Encapsulants</b>						
9008	UV/Visible light cure; remains flexible to -40°C; moisture resistant	4,500	D35	10 [1,500]	45 [6,500]	1.2 Linear
9014	UV light cure with secondary moisture cure; blue fluorescing; flexible	18,000	A70	8.2 [1,200]	119 [17,300]	1.8 Linear
9037-F	UV/Visible light cure with secondary heat cure; flexible; blue fluorescing; moisture and thermal resistance	55,000	D40	5.8 [850]	6.2 [900]	2.2 Linear
9102	UV/Visible light cure with secondary moisture cure; flexible; blue fluorescing; moisture and thermal resistance	17,000	D30-D50	4.8 [703]	18.4 [2,670]	2.0 Linear



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