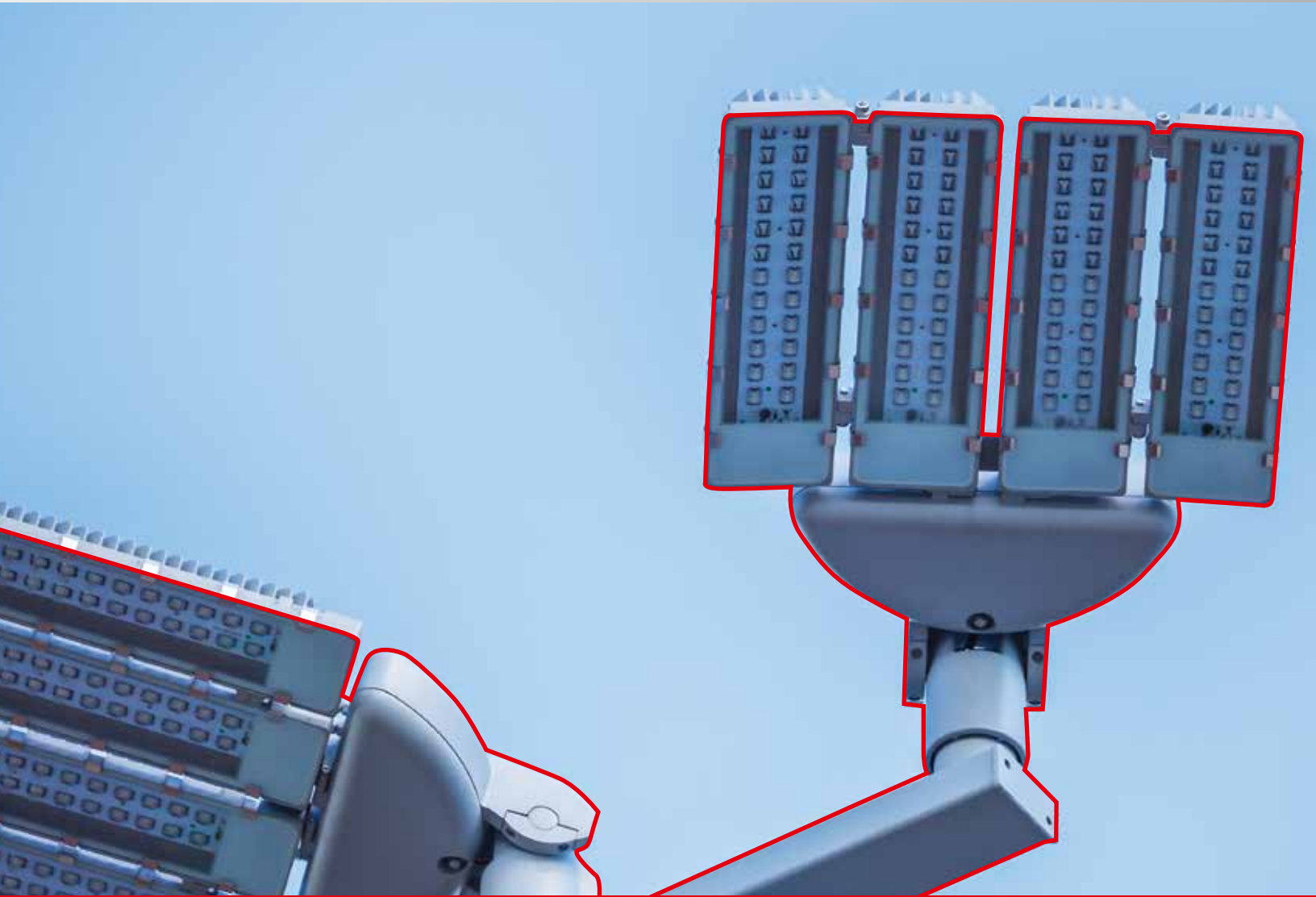




LED Compatible Solutions



Henkel

Excellence is our Passion

LED Compatible Solutions

Henkel is the first adhesive and sealant manufacturer to provide a comprehensive offering of LED compatible products

1 Lens Bonding/Sealing
Bond and seal to prevent moisture, dust, dirt and other contaminants from entering assemblies. Permanent or serviceable.

2 Potting
Encapsulate electrical and optical components and fill structural voids to strengthen and protect.

3 Structural Bonding
Bond sub-component assemblies and structural elements.



5 General Bonding
General bonding of sub-assemblies such as wire tacking and internal components.

4 Threadlocking/Thread Sealing
Prevent threaded fasteners from loosening due to shock, vibration and thermal cycling.



PERFORMANCE TESTING COMPARISON OF HENKEL LED COMPATIBLE PRODUCTS ON CREE® TEST BOARDS



LED Chemical Compatibility Test Method

Six data points per board with two different types of boards yield 12 data points per adhesive

- Point 1, 2 –CC –small drop of adhesive placed directly on LED chip, allowed to cure seven days, glass cap glued over LED to seal.
- Point 3, 4 –CP –small drop of adhesive placed as close to LED as possible without touching, allowed to cure seven days, glass cap glued over dome to seal.
- Point 5 –UCC –small drop of adhesive placed directly on LED chip, glass cap glued over dome immediately to seal.
- Point 6 –UCP –small drop of adhesive placed as close to LED as possible without touching, glass cap glued over dome immediately to seal.

Test is run for six weeks with a weekly check on color shift of LED and light intensity output of LED.

Lighting LED Chemical Compatibility Results Interpretation

- Directly Compatible – all six points pass
- Indirectly Compatible – points 3, 4 and 6 pass and there is at least one failure from points 1, 2 and 5
- Incompatible – there is at least one failure from points 3, 4 and 6

DIRECTLY COMPATIBLE

1 CC ✓ 2 CC ✓ 3 CP ✓ 4 CP ✓ 5 UCC ✓ 6 UCP ✓

INDIRECTLY COMPATIBLE

1 CC ✓ 2 CC ✗ 3 CP ✓ 4 CP ✓ 5 UCC ✓ 6 UCP ✓

INCOMPATIBLE

1 CC ✓ 2 CC ✓ 3 CP ✗ 4 CP ✓ 5 UCC ✗ 6 UCP ✓

✗ failure ✓ pass

DIRECT COMPATIBILITY				
PRODUCT	TYPE	COLOR	AGENCY LISTING	APPLICATION
POLYURETHANE				
LOCTITE® U-09FL™	2K	Clear	None	Lens Bonding and Sealing, General Bonding
MODIFIED SILANE (MSP)				
TEROSON® MS 5500™ Clear	1K	Clear		Lens Bonding and Sealing
SILICONE				
LOCTITE® 5600™	2K	Black	UL746C	Lens Bonding and Sealing
LOCTITE® SI 5620™	2K	Clear		Potting
LOCTITE® SI 595™	1K	Clear		Lens Bonding and Sealing
LOCTITE® SI 5611F™	2K	Grey	UL94V-0	Potting
LOCTITE® SI 5623™	2K	Clear		Potting
LOCTITE® SI 5611S™	2K	Grey	UL 94V-0	Potting
LOCTITE® SI 5640™	2K	Grey	UL 94V-0	Potting
LOCTITE® SI 5913™	1K	Clear		Optically Clear
LOCTITE® SI 5092™	1K (UV)	Opaque		Lens Bonding and Sealing
UV CYANOACRYLATE				
LOCTITE® 4311™	1K	Clear		Wire Tacking, General Bonding
CYANOACRYLATE				
LOCTITE® 3092™	2K	Clear	None	General Bonding
LOCTITE® 460™	1K	Clear	None	Wire Tacking, General Bonding
UV ACRYLIC				
LOCTITE® AA 3972™	1K	Clear		Lens Bonding and Sealing
LOCTITE® AA 3922™	1K	Clear		Lens Bonding and Sealing
LOCTITE® AA 3553™	1K	Clear		Lens Bonding and Sealing
UV EPOXY				
LOCTITE® EA 3336™	2K	Clear		Lens Bonding and Sealing, General Bonding
EPOXY – HEAT CURE				
LOCTITE® EA 3981™	1K	Opaque White		General Bonding

INDIRECT COMPATIBILITY				
PRODUCT	TYPE	COLOR	AGENCY LISTING	APPLICATION
ANAEROBIC				
LOCTITE® 246™	1K	Blue		Threadlocking
EPOXY				
LOCTITE® EA E-30CL™	2K	Clear		Potting
LOCTITE® EA E-40EXP™	2K	Black	UL 674	Potting
LOCTITE® EA E-90FL™	2K	Grey		General Bonding
LOCTITE® PE 3145™/PE 3165™	2K	Black	UL 94V-0	Potting
LOCTITE® EA E-60NC™	2K	Black	UL RTI	Potting
LOCTITE® EA E-40HT™	2K	White		General Bonding, Potting
LOCTITE® EA 0151™	2K	Clear		General Bonding
POLYURETHANE				
LOCTITE® UK 1366™ B10	2K	Green	GL (wind blade spec)	General Bonding
MODIFIED SILANE (MSP)				
TEROSON® MS 5510™	1K	White		Lens Bonding and Sealing
TEROSON® MS 5570™	1K	White		Lens Bonding and Sealing
TEROSON® MS 5590™	1K	Black		Lens Bonding and Sealing
TEROSON® MS 939™	1K	Black		Lens Bonding and Sealing
SILICONE				
LOCTITE® SI 5604™	2K	Black	UL 746C	General Bonding
LOCTITE® SI 5031™	1K (UV)	Opaque		Lens Bonding and Sealing
UV ACRYLIC				
LOCTITE® AA 3106™	1K	Clear		Lens Bonding and Sealing
LOCTITE® AA 3526™	1K	Clear		Lens Bonding and Sealing
LOCTITE® DSP 3196™	1K	Clear		Optically Clear
LOCTITE® AA 3341™	1K	Clear		Lens Bonding and Sealing
CYANOACRYLATE/EPOXY				
LOCTITE® 4090™	2K	Opaque		General Bonding
CYANOACRYLATE				
LOCTITE® 455™	1K	Clear		General Bonding



HENKEL CORPORATION

One Henkel Way

Rocky Hill, CT 06067

1.800.LOCTITE (562.8483)

1.905.814.6511 (in Canada)

www.henkelna.com/ledcompatibility