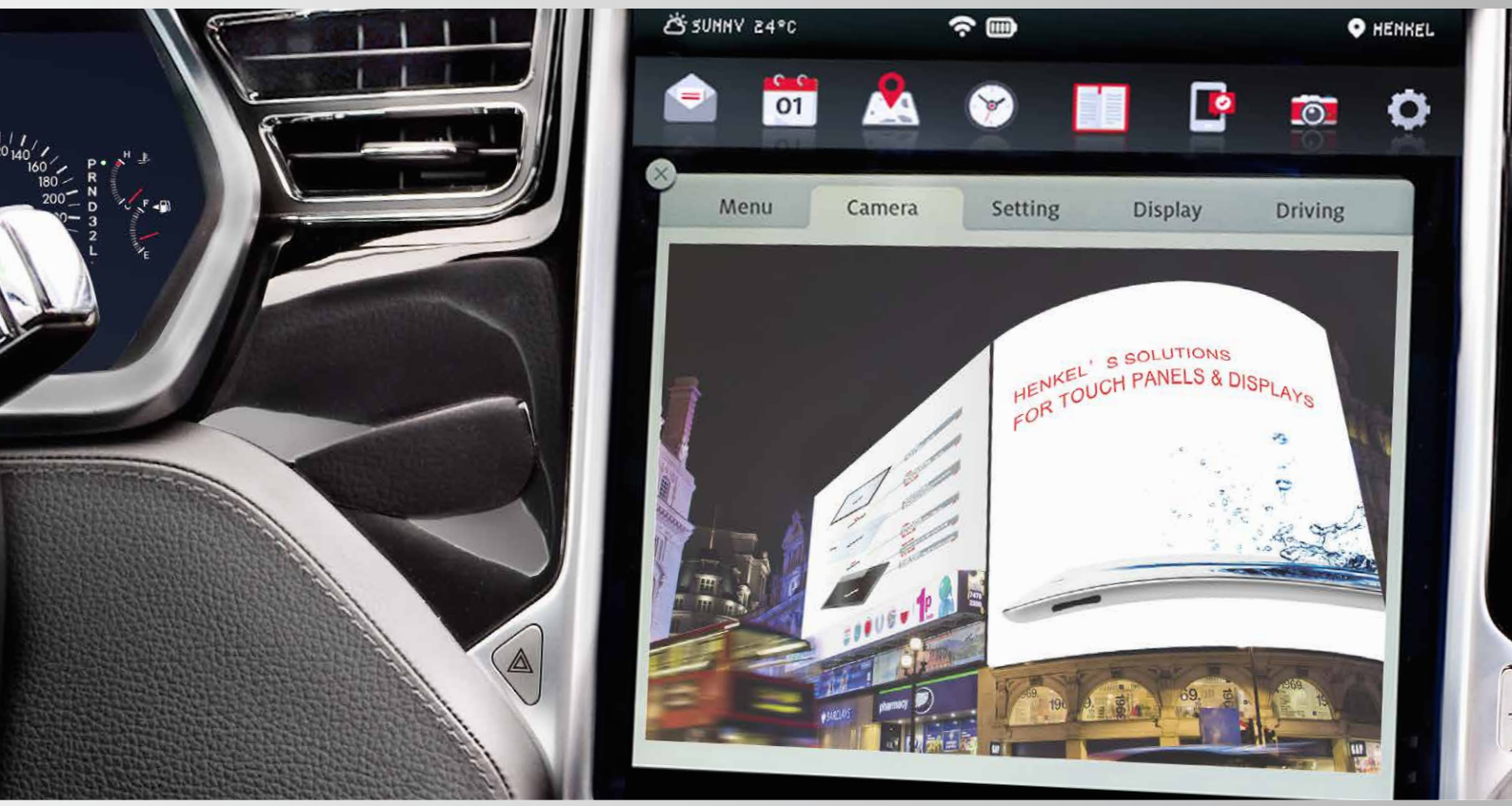
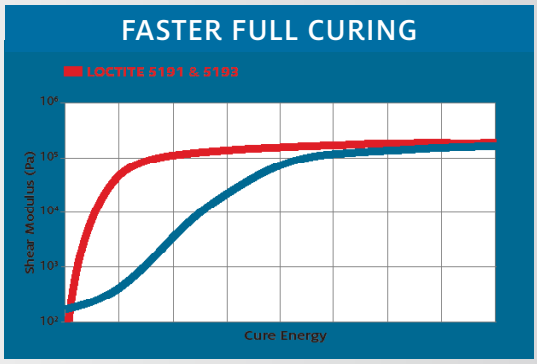
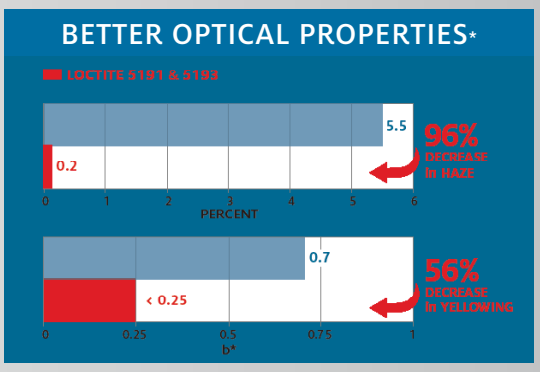
LOCTITE



Faster Curing Silicone LOCAs with Better Optical Properties

LOCTITE 5191, 5193, 5195 and 5191DM **CLEARLY** set the benchmark





Silicones have traditionally required more curing energy than acrylics. **LOCTITE 5191, 5193, 5195** and **5191DM** require 3 to 10 times less curing energy, depending on the substrates, gap and light source. This changes the paradigm and opens the door to a higher level of manufacturability.

All LOCAs will yellow and develop haze when they are exposed to heat, humidity and UV light. **LOCTITE 5191™, 5193™, 5195™** and **5191DM™** start with superior optical properties and set the standard for minimal degradation in optical performance after even the most severe RA testing.

Henkel

*Comparison for haze and yellowing after 500 hours QUV at 750 micron gap on glass.

LOCTITE

Product Selector Guides

TYPICAL PRODUCT ATTRIBUTES	DIRECT BONDING LOCA SELECTOR GUIDE			DAM LOCA SELECTOR GUIDE
	LOCTITE DSP 5191	LOCTITE DSP 5193	LOCTITE DSP 5195	LOCTITE DSP 5191DM
Chemistry	Silicone	Silicone	Silicone	Silicone
Viscosity (mPa · s)	2,700	2,900	4,000	36,000
Cure Method	UV only	UV / moisture	UV only	UV only
Light Source Compatibility (MPMA[1])	MPMA Fusion H+, H, D	MPMA Fusion H+, H, D	MPMA Fusion H+, H, D	MPMA Fusion H+, H, D
Full cure energy (mJ/cm^2) @ 100 mW/cm^2 UVA, MPMA[1] UV Source	5,000	5,000	6,000	5,000
Shear Modulus (KPa) - MPMA Cured	319	339	36.8	126
Hardness (Shore Double Zero)	68	70	38	50
Elongation	130%	120%	> 200%	270%
Volume Shrinkage	< 0.5%	0.70%	< 0.5%	< 0.5%
Refractive Index	1.41	1.41	1.41	1.41
% Transmittance (average 380-780 nm), reported at 550 nm	> 99%	> 99%	> 99%	> 99%
Haze @ 250 micron (%)	< 0.5	< 0.5	< 0.25	< 0.5
Yellowness @ 250 micron (b*)	< 0.25	< 0.25	< 0.25	< 0.25

[1]MPMA= Medium Pressure Mercury Arc Light Source

Equipment Partners

To provide best-in-class process support for our LOCA product line, Henkel has formally partnered with the three leading LOCA lamination equipment manufacturers:

EFC
EASY FIELD CORPORATION

ING
IINUMA GAUGE MANUFACTURING CO., LTD.

SHIBAURA
SHIBAURA MECHATRONICS CORPORATION

SUMMARY OF CURRENT HENKEL LAMINATION EQUIPMENT

Capability	Iinuma KAR03	Iinuma VFM02	Shibaura M1-Vaster	Easy Field 221980-R1
Dispense Method	Point	Slit coat	Point array	Point
Process Type	Ambient	Vacuum	Vacuum	Ambient
Display Size	2" - 7"	3" - 20"	3" - 10.4"	2" - 27"
Location	Henkel (Shanghai, China) Henkel (Rocky Hill, CT, USA)	Iinuma (China, Japan)	Henkel (Yokohama, Japan)	Easy Field (Taipei, Taiwan)
				

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