



Tru-Bond™ LOCA 5000

UV/Visible Light Cure Adhesive

Technical Data Sheet

Rev02, Oct 2016
Preliminary

Liquid Optical Clear Adhesive (LOCA)

PRODUCT DESCRIPTION

Devcon® Tru-Bond™ LOCA products are high clarity, fast curing, UV light curing products. They are engineered to eliminate the air gap between the cover lens of touch panels and display devices. These liquid dispensed, ultra-low hardness products help reduce stresses that contribute to Mura while helping to increase the impact resistance and durability of the assembly.

PHYSICAL PROPERTIES (uncured)

Chemical Class	Acrylic
Appearance(uncured)	Clear Liquid
Components	Single-Requires no Mixing
Viscosity @25°C, Brookfield RV Spindle 4, 10 rpm, cps	5,000
Specific gravity @25°C	0.96

After 500 hours @ 85°C/85% RH

L*	>99
a*	-0.18
b*	0.44
Transmission @550nm, ASTM D1003, %	>99.5
Haze, ASTM D1003, %	<0.4

PHYSICAL PROPERTIES (cured)

Curing condition: LED 365 lamp, illumination intensity=150 mW/cm², total energy=1500 mJ/cm².

Shore hardness, ASTM D2240	3500
Specific gravity @25°C	0.99
Volume shrinkage, %	2.33
Refractive Index @ 25°C, ISO 489	1.46
Tg, °C	-61
Elongation, ASTM D638, %	600
Tensile strength, ASTM D638, MPa	0.1
Dielectric constant @ 1MHz	5.5
Storage modulus @25°C, KPa	12

After 500 hours @ 85°C

L*	>99
a*	-0.16
b*	0.46
Transmission @550nm, ASTM D1003, %	>99.5
Haze, ASTM D1003, %	<0.4

After 500 cycles @ -40°C (30min) to 85°C (30min)

L*	>99
a*	-0.08
b*	0.16
Transmission @550nm, ASTM D1003, %	>99.5
Haze, ASTM D1003, %	<0.4

OPTICAL PROPERTIES OF CURED MATERIALS

Optical testing specimen: 0.1 mm thick layer adhesive

between 2 pcs 1 mm thick panel glass
Curing condition: LED 365 lamp, illumination intensity=150 mW/cm², total energy=1500 mJ/cm²
Equipment: Konica Minolta CA3600

L* a* b*, ASTM E308	
L*	>99
a*	-0.06
b*	0.15
Transmission @550nm, ASTM D1003, %	>99.5
Haze, ASTM D1003, %	<0.4

After 500 hours exposure to 0.89 W/m² UV light @ 50°C

L*	>99
a*	-0.08
b*	0.63
Transmission @550nm, ASTM D1003, %	>99.5
Haze, ASTM D1003, %	<0.4

MECHANICAL PROPERTIES OF CURED MATERIALS

Cross bonding tensile test can show the bonding strength on the vertical direction. The specimen is 0.15 mm thick 6 mm diameter layer adhesive between 2 pcs 25.4*76.2*1 mm panel glass. The 2 pcs panel glass were cross bonded together. The specimens were cured on LED 365 lamp, with 150 mW/cm² illumination intensity and 1500 mJ/cm² total energy.

Cross bond tensile strength	
N/mm ²	0.14
psi	20.3



PRECAUTIONS

Please refer to the appropriate material safety data sheet (MSDS) prior to using this product.

STORAGE

Store the unopened product in a cool, dry, well ventilated location away from sources of heat. Optimal storage temperatures should range between **10 °C (50 °F) and 32 °C (90 °F)**. **Do not expose the product to light.** It may polymerize upon prolonged exposure to ambient or artificial light. Product removed from the containers during use should not be returned to original containers in order to avoid potential contamination.

CONVERSIONS

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\mu\text{m} / 25.4 = \text{mil}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{Cp}$

WARRANTY

ITW will replace any material found to be defective. Because the storage, handling and application of this material are beyond our control, we can accept no liability for the results obtained.

NOTE

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