LOCTITE® 3730™

January 2009

PRODUCT DESCRIPTION

LOCTITE® 3730™ provides the following product characteristics:

Technology	Acrylic
Chemical Type	Acrylate
Appearance (uncured)	Transparent amber liquid[LMS]
Components	One component - requires no mixing
Viscosity	Medium
Cure	Ultraviolet (UV)/ visible light
Cure Benefit	Production - high speed curing
Application	Sealing or LCD end-sealing

LOCTITE® 3730™ is a UV light curable sealant for LCD end-sealing applications.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Flash Point - See MSDS

Viscosity @ 25°C, mPa·s (cP):

Haake viscometer, PK1, 2°:

Constant shear rate @ 20 s^{-1} 22,000 to 28,000[LMS]

TYPICAL CURING PERFORMANCE

LOCTITE® 3730™ cures when exposed to UV radiation of 365 nm. To obtain a full cure on surfaces exposed to air, radiation at 220 to 260nm is required. The cure rate and ultimate depth of cure will depend on the UV intensity, the spectral distribution of the light source, the exposure time and the light transmittance of the substrates.

Tack Free Time

Tack Free Time is the time required to achieve a tack free surface

Tack Free Time, seconds:

High pressure mercury arc light source:

40 mW/cm² , measured @ 365 nm, ≤15[LMS]

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Coefficient of Thermal Expansion, ISO 11359-2, K^{-1}:

-30 °C 55×10^{-6}

30 °C 140×10^{-6}

50 °C to 150 °C 190×10^{-6}

Shore Hardness, ISO 868, Durometer D 82

UV Depth of Cure, mm:

40 mW/cm² , measured @ 365 nm, for 50 seconds, using a high pressure mercury arc light source ≥2.5[LMS]

Electrical Properties:

Surface Resistivity, IEC 60093, Ω 4.0×10^{15}

Volume Resistivity, IEC 60093, Ω·cm 7.0×10^{12}

Dielectric Breakdown Strength, IEC 60243-1, kV/mm 17

Dielectric Constant / Dissipation Factor, IEC 60250:

10 kHz 4.4 / 0.05

1 MHz 3.8 / 0.06

10 MHz 3.8 / <0.01

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured @ 6 mW/cm² , measured @ 365 nm, for 5 minutes using a Philips HPR125 light source

Tensile Strength, ISO 6922:

Steel pin (grit blasted) to Glass N/mm² (psi) ≥3[LMS] (≥435)

Torsional Shear Strength, ASTM D 3658:

Aluminum hex button (grit blasted) to Glass N·m (lb·ft) 140 (103)

Cured @ 100 mW/cm² , measured @ 365 nm, for 40 seconds using a high pressure mercury arc light source

Tensile Strength, ISO 6922:

Steel pin (grit blasted) to Glass N/mm² (psi) 11 (1,595)

TYPICAL ENVIRONMENTAL RESISTANCE

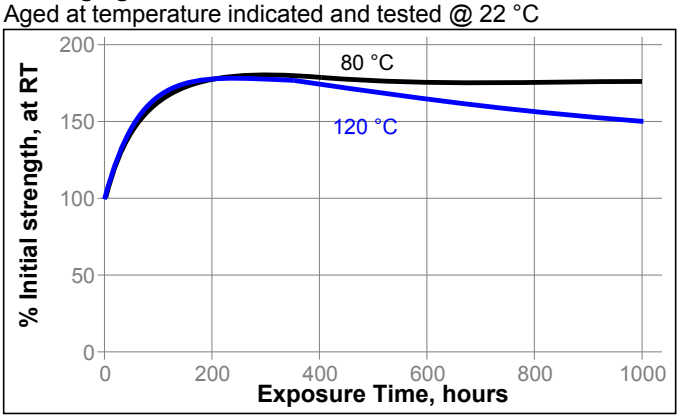
Cured @ 100 mW/cm² , measured @ 365 nm, for 40 seconds plus 1 week @ 22 °C

Tensile Strength, ISO 6922:

Steel pin (grit blasted) to Glass

Heat Aging

Aged at temperature indicated and tested @ 22 °C



Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22 °C.

		% of initial strength		
Environment	**°C**	**100 h**	**500 h**	**1000 h**
Heat/humidity 90% RH	40	130	120	110

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials

For safe handling information on this product, consult the Material Safety Data Sheet (MSDS).

Directions for use:

1. This product is light sensitive; exposure to daylight, UV light and artificial lighting should be kept to a minimum during storage and handling.
2. The product should be dispensed from applicators with black feedlines.
3. For best performance bond surfaces should be clean and free from grease.
4. Cure rate is dependent on lamp intensity, distance from light source, depth of cure needed or bondline gap and light transmittance of the substrate through which the radiation must pass.
5. Cooling should be provided for temperature sensitive substrates such as thermoplastics.
6. Plastic grades should be checked for risk of stress cracking when exposed to liquid adhesive.
7. Excess uncured adhesive can be wiped away with organic solvent (e.g. Acetone).
8. Bonds should be allowed to cool before subjecting to any service loads.

Loctite Material Specification[LMS]

LMS dated January 11, 2001. Test reports for each batch are available for the indicated properties. LMS test reports include selected QC test parameters considered appropriate to specifications for customer use. Additionally, comprehensive controls are in place to assure product quality and consistency. Special customer specification requirements may be coordinated through Henkel Quality.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.
Optimal Storage: 8 °C to 21 °C. Storage below 8 °C or greater than 28 °C can adversely affect product properties. Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Note

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Trademark usage

Reference 1.1

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Loctite:

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