

Technomelt® PUR 3631™

Known as Loctite 3631
June 2013

PRODUCT DESCRIPTION

Technomelt® PUR 3631™ provides the following product characteristics:

Technology	Hot Melt
Chemical Type	Polyurethane
Appearance (uncured)	Off-white solid ^{LMS}
Components	One component - requires no mixing
Viscosity	High
Cure	Not applicable
Application	Bonding

Technomelt® PUR 3631™ is an industrial grade polyurethane hot melt adhesive. This product has a moderate open time and cures with moisture to a tough thermoset plastic. It is designed for bonding and laminating applications where fast green strength and excellent structural and mechanical properties are desired. Typical substrates include ABS and epoxy.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.1
Flash Point - See MSDS	
Viscosity, Brookfield - RVT, 121 °C, mPa·s (cP):	
Spindle 28, speed 20 rpm	10,000 to 15,000 ^{LMS}

TYPICAL CURING PERFORMANCE

Open Time

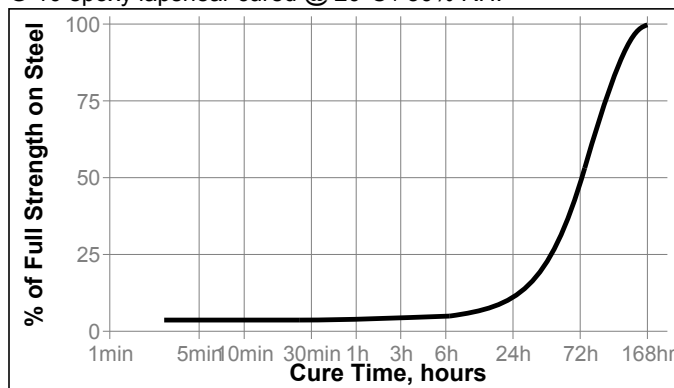
Open Time, seconds	40 to 80
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Curing Temperature

Application Temperature, °C	120
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Cure Speed vs. Time

G-10 epoxy lapshear cured @ 20°C / 50% RH.



TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Coefficient of Thermal Expansion, ISO 11359-2, K ⁻¹ :	
Pre Tg	75.6×10 ⁻⁶
Post Tg	167×10 ⁻⁶
Temperature Creep Resistance, °C:	
8.9 N (Dead Load)	170
Shore Hardness, ISO 868, Durometer D	34
Refractive Index, nD	1.6558
Glass Transition Temperature, ISO 11359-2, -35 °C	
Water Absorption, ASTM D 570, %	2.26
Elongation, ISO 527-2, %	1,150
Tensile Strength, ISO 527-2	N/mm ² 14.5 (psi) (2,100)
Tensile Modulus, ISO 527-2	N/mm ² 105.7 (psi) (15,330)

TYPICAL PERFORMANCE OF CURED MATERIAL

Cured for 5 days @ 22 °C

Lap Shear Strength, ISO 4587:

Steel (grit blasted)	N/mm ² 2.3 (psi) (330)
Aluminum	N/mm ² 1.8 (psi) (260)
Aluminum (anodised)	N/mm ² 3.2 (psi) (470)
Stainless Steel	N/mm ² 2.2 (psi) (320)
Galvanized Steel	N/mm ² 2.0 (psi) (295)
Zinc dichromate	N/mm ² 2.0 (psi) (295)
Polycarbonate	N/mm ² 6.7 (psi) (965)
Nylon	N/mm ² 4.3 (psi) (630)
G-10 Epoxy	N/mm ² 9.3 (psi) (1,350)
PVC	N/mm ² 3.3 (psi) (475)
ABS	N/mm ² 4.8 (psi) (690)
LDPE	N/mm ² 0.28 (psi) (40)
Plexiglass	N/mm ² 1.1 (psi) (165)
Wood	N/mm ² 6.6 (psi) (960)
Glass	N/mm ² 2.1 (psi) (300)
Valox®	N/mm ² 4.6 (psi) (670)

Cured for 7 days @ 20 °C / 50% RH

Block Shear Strength, ISO 13445:

PVC	N/mm ²	12.8
	(psi)	(1,860)
Acrylic	N/mm ²	8.9
	(psi)	(1,295)
Valox®	N/mm ²	5.0
	(psi)	(730)
HD Polyethylene	N/mm ²	2.2
	(psi)	(325)
ABS	N/mm ²	10.9
	(psi)	(1,585)
Acetal	N/mm ²	4.1
	(psi)	(600)

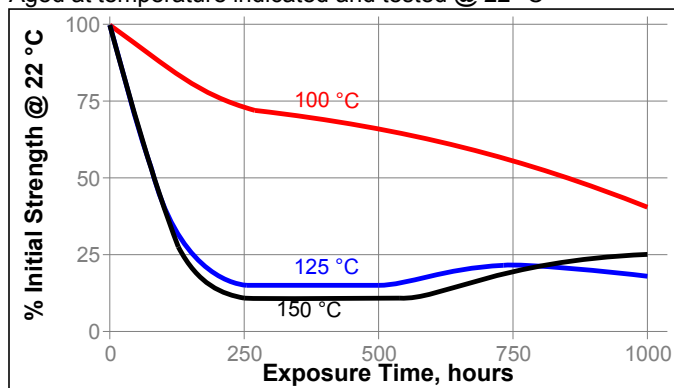
TYPICAL ENVIRONMENTAL RESISTANCE

Lap Shear Strength, ISO 4587:

G-10 Epoxy

Heat Aging

Aged at temperature indicated and tested @ 22 °C

**Chemical/Solvent Resistance**

Aged under conditions indicated and tested @ 22 °C.

Environment	°C	% of initial strength	
		300 h	500 h
Motor oil	22	99	125
Motor oil	87	87	77
Water/glycol 50/50	22	120	120
Water/glycol 50/50	87	29	12
Dextron III	22	118	115
Dextron III	87	100	62
Gasoline (unleaded)	22	128	128
Water	22	152	150
Acetone	22	43	46
Isopropanol	22	130	117
Salt fog	22	133	134
95% RH	22	142	134
Condensing Humidity	22	104	117

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. For high strength structural bonds, remove surface contaminants such as paint, oxide films, oils, dust, mold release agents and all other surface contaminants.
2. Use gloves to minimize skin contact. DO NOT use solvents for cleaning hands.
3. After heating to recommended application temperature, apply an adequate amount of adhesive to one of the bond surfaces.
4. Join the substrates within the specified open time.
5. Keep parts from moving until adhesive is adequately set. For high strength, allow to cure at 22 °C for 24 hours.

Loctite Material Specification^{LMS}

LMS dated November 15, 2002. 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

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

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Reference 0.1