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LOCTITE

Technical Data Sheet

LOCTITE 3128

August 2019

PRODUCT DESCRIPTION

LOCTITE 3128 provides the following product characteristics:

Technology	Epoxy
Chemical Type	Epoxy
Appearance (uncured)	Black viscous liquid[LMS]
Components	One component - requires no mixing
Viscosity	Medium
Cure	Heat cure (low temperature)
Application	Bonding heat sensitive components

LOCTITE 3128 is a one part, heat curable epoxy. This product is designed to cure at low temperature and gives excellent adhesion on a wide range of materials in considerably short time. Typical applications include Memory cards, CCD/CMOS Assemblies. Particularly suited where low curing temperatures are required for heat sensitive components.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Specific Gravity @ 25 °C	1.6
Yield Point, 25 °C, mPa·s	44,000
Cone & Plate Rheometer	
Casson Viscosity @ 25 °C, mPa·s (cP)	7,000 to 27,000[LMS]
Cone & Plate Rheometer	
Pot life @ 25 °C, weeks	3
Shelf Life @ -25 to -15°C, days	365

TYPICAL CURING PERFORMANCE

Recommended Curing Conditions

20 minutes @ 80°C bondline temperature
60 minutes @ 60 °C bondline temperature

Note: Sufficient time must be added to allow the bond location to reach the desired cure temperature. Curing profiles should be developed for each device.

TYPICAL PROPERTIES OF CURED MATERIAL

Cured for 60 minutes @ 80 °C

Physical Properties

Density @ 25 °C, g/cm³	1.7
Volume Shrinkage, ASTM D 792, %	3.1
Linear Shrinkage, in/in ASTM D 792,	1.0
Shore Hardness, ISO 868, Durometer D	88
Glass Transition Temperature, °C: (Tg) via TMA , ISO 11359-2	45
Coefficient of Thermal Expansion, ISO 11359-2, K^{-1}:	
alpha 1	40×10^{-6}
alpha 2	130×10^{-6}
Water Absorption, ISO 62, %:	
24 hours in water @ 23 °C	0.17
Elongation, at break, ISO 527-3, %	2.3
Tensile Strength, at break, ISO 527-3	N/mm² 35 (psi) (5,100)
Tensile Modulus, ISO 527-3	N/mm² 3,900 (psi) (570,000)

Electrical Properties

Volume Resistivity, IEC 60093, Ω·cm	2.9×10^{16}
Surface Resistivity, IEC 60093, Ω	2.8×10^{16}
Dielectric Constant / Dissipation Factor, IEC 60250:	
10 kHz	5.8 / 0.01
1 MHz	5.4 / 0.04
10 MHz	5.1 / 0.05

TYPICAL PERFORMANCE OF CURED MATERIAL

Adhesive Properties

Cured for 30 minutes @ 80 °C
Lap Shear Strength, ISO 4587:

Steel (grit blasted)	N/mm² 21 (psi) (3,000)
Epoxyglass (thickness 1.6 mm)	N/mm² ≥7[LMS] (psi) (≥1,015)

TYPICAL ENVIRONMENTAL RESISTANCE

Cured for 30 minutes @ 80 °C
Lap Shear Strength, ISO 4587:
Epoxy glass (thickness 1.6 mm)

Chemical/Solvent Resistance

Aged under conditions indicated and tested @ 22 °C

		% of initial strength		
Environment	**°C**	**100 h**	**500 h**	**1000 h**
90% RH	60	110	100	95
90% RH	40	110	105	105

TYPICAL ENVIRONMENTAL RESISTANCE

Outgassing Properties

Outgassing , NASA Outgassing:

TML, %	0.4
CVCM, %	<0.01
WVR, %	0.08

GENERAL INFORMATION

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

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Loctite Material Specification[LMS]
LMS dated May 19, 2004. 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: -15 °C to -25 °C. Storage below minus (-)25 °C or greater than minus (-)15 °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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Reference 2.4