

LOCTITE TCP 7800NC

March 2021

PRODUCT DESCRIPTION

LOCTITE TCP 7800NC provides the following product characteristics:

Technology	Phase Change Thermal Interface
Appearance	White paste
Application Method	Stencil, Screen print or Manual application
Typical Assembly Applications	Microprocessors, GPUs, Multichip modules, ASICs, IGBT, FBDIMM/Memory, Lidded processor applications and Active heat sinks in electronic applications
Application	Thermal management

LOCTITE TCP 7800NC is a non-silicone and reworkable phase change material designed for use between heat generating devices and the surfaces to which they are mounted or other heat dissipating surfaces. This material offers the application ease of a thermal grease material. It is suitable for use between any heat generating component and a heat sink or as a thermal solution where the designer is looking for a superior TIM2 replacement.

LOCTITE TCP 7800NC is supplied in jars. Other packaging formats are available upon request.

TYPICAL PROPERTIES

Viscosity Brookfield , 5 rpm @ 25°C, mPa·s (cP)	35,000
Specific Gravity, gm/cc	2
Storage Life @ 8 to 28°C, days	183
Flash Point - See SDS	

TYPICAL DRYING PERFORMANCE

Recommended Drying Conditions

@ 0.051 mm Thickness
30 hours @ 22°C or
22 minutes @ 60°C or
3 minutes @ 125°C

@ 0.152 mm Thickness
50 hours @ 22°C or
50 minutes @ 60°C or
4.5 minutes @ 125°C

@ 0.254 mm Thickness
65 hours @ 22°C or
65 minutes @ 60°C or
8 minutes @ 125°C

The above drying profile is a guideline recommendation. Conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer drying equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF DRIED MATERIAL

Physical Properties

Phase Change Temperature, DSC, °C	45
Thermal Conductivity, W/(m·K)	>3.0
Thermal Impedance @ 50 psi, °C-cm ² /W	0.18

Electrical Properties

Dielectric Constant @ 1 MHz, ASTM D150-98	4.6
Volume Resistivity, ASTM D257-93, ohm-cm	3.28×10 ¹⁶

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. Material should be stirred thoroughly before use.
2. Once the compound is applied, it will dry to a solid phase change material. Drying is required for optimal thermal performance.
3. The material flows at the phase change temperature and conforms to the surface features of the heat sink and component.
4. Upon flow, air is expelled from the interface, reducing thermal impedance and the material performs as a highly efficient thermal transfer material.

Application:

Jars / Screens

1. Keep jars closed tightly when not in use. Open jars will evaporate solvent affecting the performance of the material.
2. Place a small amount of material onto the screen. With the substrate under the screen, draw the material down, applying the material onto the substrate.
3. Recommended maximum thickness is 10 mils (254 µm) to ensure complete drying under normal conditions.

Syringe Dispense

1. Use a hand syringe or time pressure dispenser. Dispense the required amount of material onto the substrate.
2. Ideal performance is achieved by having a thin layer of material. Therefore the LOCTITE TCP 7800NC material should be drawn down or smoothed out to provide a thin layer.
3. Recommended maximum thickness is 10 mils (254 µm) to ensure complete drying under normal conditions.

Storage

Store product in the unopened container in a cool dry well ventilated area. Storage information may be indicated on the product container labeling.

Optimal Storage : 8 to 28 °C

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 Henkel

Representative.

Reference 0.2

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

Conversions

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

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