

LOCTITE® TFX 3010

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Product description

LOCTITE® TFX 3010 provides the following product characteristics:

Technology	SMP
Chemical type	Silane modified polymer
Appearance (Component A)	Dark grey
Appearance (Component B)	White
Components	Two component – requires mixing
Appearance (cured)	Dark grey
Cure	Room temperature cure
Application	Thermal gap filler
Mix ratio by volume: (component A : B)	1 : 1
Viscosity	Thixotropic paste
In service temperature	-40 to 80°C (-40 to 176°F)
Specific benefits	<ul style="list-style-type: none"> • High thermal conductivity: 3.0 W/m-K • Dispensable, 2 component Silicone free gap filler for unique geometries and thickness. • Room temperature cure, no oven required • Low compression stress during replacement of new battery module • Long working time • 12-month shelf life

LOCTITE® TFX 3010 is a two component, high performance, thermally conductive silicone free dispensable gap filling material for battery module replacement. This material offers infinite thickness variations with little or no stress to the sensitive components during or following assembly. As cured, it will provide a soft, thermally conductive, form-in place elastomer that is ideal for fragile assemblies, capable of filling unique and intricate air voids and gaps. Typical applications include power storage using Lithium-ion batteries module replacement, silicone sensitive applications, applications requiring high thermal transfer and low compressive stress.

Typical properties of uncured material

Component A

Specific gravity @ 23°C	3.0
Viscosity, parallel plate @25°C, mPa·s (cP): Plate: PP25_50 shear rate 1.0 s ⁻¹	875,000

Component B

Specific gravity @ 23°C	3.0
Viscosity, parallel plate @25°C, mPa·s (cP): Plate: PP25_50 shear rate 1.0 s ⁻¹	450,000

Typical curing performance

Working life, minutes	60
time to reach 300N, minutes	60
Assembly Force, 1.36mm gap, N	165

Typical performance of cured material

Cured for 24 hours @ 23 °C

Physical properties:

Hardness, Durometer 00, 6.35 mm thickness	75
Siloxane content, ΣD4-D10, ASTM F2466, ppm	ND
Heat Capacity, ASTM D1269, J/g-K	0.87
Thermal Conductivity, ASTM D5470, W/m-K	3.0

Electrical properties:

Dielectric strength, ASTM D149, V/mm	12,900
Dielectric constant, ASTM D150 @1000 Hz	14.9
Dielectric breakdown voltage ASTM D149-09 @mmmm, kV/mm	12.9
Volume resistivity, ASTM D257, Ω-meter	1×10 ⁶

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.

Directions for use

1. Remove all residual old thermal gap filler from surface. Clean surface with TEROSON® VR 10 to remove surface contaminants.
2. LOCTITE® TFX 3010 thermal gap filler is available as 2 component cartridge system (2x200cc volume of A- and B-component). It can be applied with 2 component application tool at ambient conditions. If a faster dispense rate is desired, then both cartridges can be pre-heated in TEROSON® cartridge pre-heating box at 60°C for least 15 minutes but maximum 60 minutes (remove aluminum bottom cover prior preheating cartridge).
3. Open new cartridges and mount onto the manifold. Put the thermal gap filler set into the application tool. While applying light pressure dispense a small amount making sure both components A & B are extruding equally. Attach static mixer (173mm length) to manifold and secure with coupling nut, then dispense and discard approximately 25 to 50mm, before applying it onto the part to be bonded.
4. For maximum heat dissipation apply LOCTITE® TFX 3010 evenly into gluing support while keeping the tip of the static nozzle embedded in dispensed material to avoid any air inclusions.
5. Application to the substrate should be made within 10 minutes of first dispensing of material.
6. Assemble the battery module on the applied thermal gap filler within working time and press evenly into the final position (Gap Filler should be visible at the edges of the battery after mounting).

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product package labeling.

Optimal Storage: 10°C to 25°C. Storage below 5°C or greater than 30°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 Henkel representative.

Product specification

The technical data contained herein are intended as reference only and are not considered specifications for the product. Product specifications are located on the Certificate of Analysis or please contact Henkel representative.

Approval and certificate

Please contact Henkel representative for related approval or certificate of this product.

Data ranges

The data contained herein may be reported as a typical value. Values are based on actual test data and are verified on a periodic basis.

Temperature/Humidity Ranges: 23°C / 50% RH = 23±2°C / 50±5% RH

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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