Technical Data Sheet

LOCTITE® TFX 3010

June 2024

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	• 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 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
(°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

Disclaimer
The information provided in this Technical data sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product. Any liability in respect of the information in the Technical data sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:
In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:
The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product. Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

In case products are delivered by Henkel Corporation, or Henkel Canada Corporation, the following disclaimer is applicable:
The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

Trademark usage
Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 1