



# LOCTITE® TFX 3018

June 2025

**Product description**

LOCTITE® TFX 3018 provides the following product characteristics:

|                                           |                                                                                                                                                                                                                                                                           |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Technology                                | 2C SMP thermal gap filler                                                                                                                                                                                                                                                 |
| Chemical type                             | Silane modified polymer                                                                                                                                                                                                                                                   |
| Appearance (Component A)                  | Black                                                                                                                                                                                                                                                                     |
| Appearance (Component B)                  | White                                                                                                                                                                                                                                                                     |
| Components                                | Two component – requires mixing                                                                                                                                                                                                                                           |
| Appearance (cured)                        | Black                                                                                                                                                                                                                                                                     |
| Cure                                      | Room temperature cure                                                                                                                                                                                                                                                     |
| Application                               | EV battery thermal gap filler                                                                                                                                                                                                                                             |
| Mix ratio by volume:<br>(component A : B) | 1 : 1                                                                                                                                                                                                                                                                     |
| Viscosity                                 | Thixotropic paste                                                                                                                                                                                                                                                         |
| In service temperature                    | -40 to 80°C                                                                                                                                                                                                                                                               |
| Specific benefits                         | <ul style="list-style-type: none"><li>• Thermal conductivity, 3.0 W/m-K</li><li>• Dispensable, 2 component Silicone-free gap filler</li><li>• Room temperature cure, no oven required</li><li>• Low compression stress during replacement of new battery module</li></ul> |

LOCTITE® TFX 3018 is a non-silicone, 2-part room temperature curable gap filler suitable for use in battery module replacement. With a 3.0 W/m-K thermal performance, it provides an excellent silicone-free solution critical to power storage applications using lithium ion batteries. This material is an exceptional choice for use in EV battery thermal gap filling.

**Typical properties of uncured material**

**Component A**

|                                                    |         |
|----------------------------------------------------|---------|
| Viscosity, mPa·s (cP):                             |         |
| High shear rate 3,000 s <sup>-1</sup> , ASTM D5099 | 5,000   |
| Low shear rate, 1.0 s <sup>-1</sup> , DIN53019     | 425,000 |
| Density, g/cc, ASTM D792                           | 3.0     |
| Storage life @ 25°C, days                          | 90      |

**Component B**

|                                                    |         |
|----------------------------------------------------|---------|
| Viscosity, mPa·s (cP):                             |         |
| High shear rate 3,000 s <sup>-1</sup> , ASTM D5099 | 20,000  |
| Low shear rate, 1.0 s <sup>-1</sup> , DIN53019     | 650,000 |
| Density, g/cc, ASTM D792                           | 3.0     |
| Storage life @ 25°C, days                          | 90      |

**Mixed properties**

|                                       |   |
|---------------------------------------|---|
| Work life @ 25°C, hours<br>ASTM D4473 | 4 |
|---------------------------------------|---|

**Typical cure schedule**

- 24 hours @ 25°C, ASTM D4473
- 3 hours @ 80°C, ASTM D4473

The above cure profiles are guideline recommendations. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

**Typical performance of cured material**

**Physical properties**

|                                            |      |
|--------------------------------------------|------|
| Hardness, Durometer 00, 6.35 mm thickness  | 75   |
| Heat Capacity, ASTM D1269, J/g-K           | 0.87 |
| Flamability, UL 94                         | V-0  |
| Siloxane content, ΣD4-D10, ASTM F2466, ppm | ND   |

**Electrical properties**

|                                          |                   |
|------------------------------------------|-------------------|
| Dielectric strength, ASTM D149, V/mm     | 14,000            |
| Dielectric constant, ASTM D150 @1,000 Hz | 17                |
| Volume resistivity, ASTM D257, Ω-meter   | 1x10 <sup>6</sup> |

**Thermal properties**

|                                         |     |
|-----------------------------------------|-----|
| Thermal conductivity, ASTM D5470, W/m-K | 3.0 |
|-----------------------------------------|-----|



**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 3018 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.
3. Open new cartridges. 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 and discard them.
4. For maximum heat dissipation apply LOCTITE® TFX 3018 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 15 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 unopened container in a controlled environment, ideally at 25°C.

**Optimal storage: 25 °C for a 3-month shelf life, in sealed containers with moisture barrier packaging.**

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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Reference 1

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