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# LOCTITE TCF 4000 PXF

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## PRODUCT DESCRIPTION

LOCTITE TCF 4000 PXF provides the following product characteristics:

|                                      |   |
|--------------------------------------|---|
| <b>Technology</b>                    | Phase Change  |
| <b>Appearance</b>                    | Gray  |
| <b>Application Method</b>            | Manual application  |
| <b>Product Benefits</b>              | <ul style="list-style-type: none"> <li>• Low thermal resistance</li> <li>• Non silicone</li> <li>• No pump-out, dry-out or pull-out</li> </ul>  |
| <b>Phase change temperature</b>      | 45 °C   |
| <b>Application</b>                   | Thermal management  |
| <b>Typical Assembly Applications</b> | Thermal grease replacement in computing applications, Lidded and bare die processor applications and Used between any heat generating electrically isolated component and a heat sink |

LOCTITE TCF 4000 PXF is a reworkable phase change thermal interface material suitable for use between a heat sink and variety heat dissipating components. The material flows at the phase change temperature, conforming to the surface features of the components. Upon flow, air is expelled from the interface, reducing thermal impedance, performing as a highly efficient thermal transfer material. Custom parts are also available upon request with low cost tooling.

## TYPICAL PROPERTIES

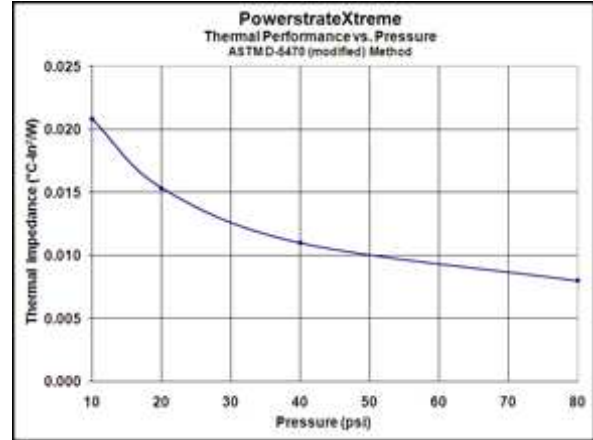
### PXF-8 with

|   |             |
|---|-------------|
| Volumetric Expansion on phase change, % | 15          |
| Thermal Impedance , ASTM D5470:         |             |
| @ 20 psi, °C-in <sup>2</sup> /W         | 0.015       |
| @ 80 psi, °C-in <sup>2</sup> /W         | 0.008       |
| Compound Thickness Before Phase Change: |             |
| Inches                                  | 0.008       |
| (mm)                                    | (0.2)       |
| Viscosity Above Phase Change Temp       | thixotropic |

### PXF-16

|   |             |
|---|-------------|
| Volumetric Expansion on phase change, % | 15          |
| Thermal Impedance , ASTM D5470:         |             |
| @ 20 psi, °C-in <sup>2</sup> /W         | 0.023       |
| @ 80 psi, °C-in <sup>2</sup> /W         | 0.019       |
| Compound Thickness Before Phase Change: |             |
| Inches                                  | 0.016       |
| (mm)                                    | (0.4)       |
| Viscosity Above Phase Change Temp       | thixotropic |

## THERMAL RESISTANCE vs. MOUNTING PRESSURE



## GENERAL INFORMATION

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

## DIRECTIONS FOR USE

1. This product is packaged as a free-standing film between two release liners and is supplied as a die cut preform to match a wide variety of applications.
2. Currently supplied in two compound thicknesses, multiple thicknesses will soon be available to match surface finishes and flatness considerations in the interface area.
3. LOCTITE TCF 4000 PXF is completely reworkable without solvents and is easier to remove than previous formulations.
4. If a clean surface is required, any compound present can easily be removed with mineral spirits. No silicones are utilized in the formulation of the phase change compound.
5. Unlike previous versions of Powerstrate, LOCTITE TCF 4000 PXF does not require adhesive edge strips for heatsink attach applications. The "tacky" nature of the product allows for it to naturally adhere to the heatsink surface.



**Storage**

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

**Optimal Storage: 23 °C. Storage greater than 40 °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.

**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**

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

**Disclaimer****Note:**

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.

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Reference **N/A**