Technical Data Sheet

LOCTITE TCF 4000 PXF

April 2014

PRODUCT DESCRIPTION

LOCTITE TCF 4000 PXF provides the following product characteristics:

Technology	Phase Change
Appearance	Gray
Application Method	Manual application
Product Benefits	• Low thermal resistance • Non silicone • No pump-out, dry-out or pull-out
Phase change temperature	45 °C
Application	Thermal management
Typical Assembly Applications	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

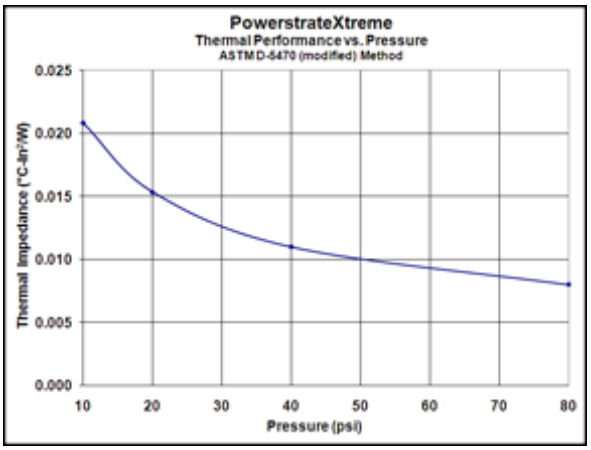
PXF-8 with

Volumetric Expansion on phase change, %	15
Thermal Impedance , ASTM D5470:	
@ 20 psi, ºC-in²/W	0.015
@ 80 psi, ºC-in²/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, ºC-in²/W	0.023
@ 80 psi, ºC-in²/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
(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa = N/mm²
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
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.
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, Resin Technology Group, Inc., 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 N/A