

Thermally Conductive Adhesives from Polytec PT



Description

Polytec PT offers a range of thermally conductive adhesives for technology applications. The products are two-part and single-part epoxy systems designed for all applications where heat transfer is essential, including heat-sinking and ceramic packaging.

“With Polytec we have about three times the pot life we had before, and the bubbles rise to the top so we can pretty much do what we want with it. Polytec TC 437 is now our preferred material” – Ben Moffat, Variohm

Processing	Cold-cured	Hot-cured	Hot-cured	Hot-cured	Hot-cured
Components	2C	1C	1C	2C	2C
Electrically insulating	Yes	Yes	No	Yes	No
0-1 W/mK	TC 451 TC 417-2 TC 437	TC 351	-	TC 430	-

Thermally Conductive Adhesives from Polytec PT



Processing	Cold-cured	Hot-cured	Hot-cured	Hot-cured	Hot-cured
1-2 W/mK	TC 418 TC 432	-	TC 304 TC 301	TC 420 TC 418	-
2-4 W/mK	TC 423	-	-	TC 433 TC 423	-
4 W/mK	-	-	EC 242 Frozen	-	VP 2026

Features & Benefits

- Excellent thermal conductivity – up to 4W/mK



- Both ambient and thermal cure options
- Process convenient packaging, including twin-packs, cartridges, and premixed and frozen syringes
- Can bond difficult combinations of materials such as copper and aluminum
- Gap-filling

Thermally Conductive Adhesives from Polytec PT



- Thermally conductive over large areas
- Resistant to most process media such as water, oil or gas

Applications



- Heat dissipation
- Chip bonding
- Heat sink bonding
- Power semiconductors
- Electronics
- Opto-electronics
- Hybrid microelectronics

Thermally Conductive Adhesives from Polytec PT



- Automotive
 - Potting sensors and thermistors
 - Heat exchangers
 - Battery cells

Product name	Features	Application
Polytec TC 301	<ul style="list-style-type: none">· Thermal conductivity ($W \cdot m^{-1} \cdot K^{-1}$): 1.9· Number of components: 1· Temperature range: -55 to +180°C (280°C short-term)· Consistency: creamy paste· Colour: grey	<p>Polytec TC 301 is a standard single component, thermally conductive epoxy with excellent thermal conductivity. It was designed for all applications where heat transfer is essential (heat-sinking, aluminum or ceramic packaging).</p> <p>Polytec TC 301 has a conveniently long pot and shelf life. It is ideal for all dispensing and screen applications. It has an excellent adhesion on metals, ceramic, glass and most plastics.</p>

Thermally Conductive Adhesives from Polytec PT



Product name	Features	Application
Polytec TC 304	<ul style="list-style-type: none">· Thermal conductivity ($W \cdot m^{-1} \cdot K^{-1}$): 1.4· Number of components: 1· Temperature range: -55 to +180°C (280°C short-term)· Consistency: creamy paste· Colour: metal grey	<p>Polytec TC 304 is a single component, thermally conductive epoxy with excellent thermal conductivity. It was designed for all applications where heat transfer is essential (heat-sinking, aluminum or ceramic packaging etc.).</p> <p>Polytec TC 304 has a convenient long pot and shelf life. It is ideal for all dispensing and screen printing applications. Polytec TC 304 has an excellent adhesion to metals (e.g. aluminum, copper, brass), ceramic, glass and most plastics.</p>

Thermally Conductive Adhesives from Polytec PT



Product name	Features	Application
Polytec TC 351	<ul style="list-style-type: none">· Thermal conductivity ($\text{W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$): 0.8· Number of components: 1· Temperature range: -55 to +200°C (300°C short-term)· Consistency: creamy paste· Colour: black	<p>Polytec TC 351 is a single component, thermally conductive epoxy with good thermal conductivity. It was designed for all applications where electrically insulating and thermally conductive bonds are desirable.</p> <p>Polytec TC 351 has a conveniently long pot and shelf life which is ideal for high volume dispensing techniques. Typical applications are bonding of sensors in metal holders and fixation of single devices on PCBs.</p>

Thermally Conductive Adhesives from Polytec PT



Product name	Features	Application
Polytec TC 406	<ul style="list-style-type: none">· Thermal conductivity ($W \cdot m^{-1} \cdot K^{-1}$): 2.2· Number of components: 2· Mix ratio by volume: 2:1· Temperature range: -55 to +150°C (240°C short-term)· Consistency: creamy paste· Colour: white	<p>Polytec TC 406 is a pasty, two component epoxy which cures at room temperature, used for thermal management in electronics, lighting, hybrid technology, sensor technology and power engineering. It is supplied in a process-convenient side-by-side cartridge, ready for dispensing.</p>
Polytec TC 411	<ul style="list-style-type: none">· Thermal conductivity ($W \cdot m^{-1} \cdot K^{-1}$): 1.4· Number of components: 2· Mix ratio by volume: 2:1· Temperature range: -55 to +120°C (220°C short-term)· Consistency: creamy paste· Colour: white	<p>Polytec TC 411 is a pasty, two component, medium-hard epoxy which cures at room temperature, used for thermal management in electronics, lighting, hybrid technology, sensor technology and power engineering. It is supplied in a process-convenient side-by-side cartridge, ready for dispensing.</p>

Thermally Conductive Adhesives from Polytec PT



Product name	Features	Application
Polytec TC 417-2	<ul style="list-style-type: none">· Thermal conductivity ($W \cdot m^{-1} \cdot K^{-1}$): 0.80· Number of components: 2· Mix ratio by weight: 100:13· Temperature range: -55 to +180°C (250°C short-term)· Consistency: flowable paste· Colour: black	<p>Polytec TC 417-2 is a two component, thermally conductive, electrically insulating epoxy. It is used in various thermal management applications, like potting of large volumes. It has an excellent chemical and moisture resistance. It has an excellent adhesion to glass, metal, ceramic, FR4 and most plastics. The room temperature cure allows bonding of temperature sensitive substrates very conveniently.</p>

Thermally Conductive Adhesives from Polytec PT



Product name	Features	Application
Polytec TC 422	<ul style="list-style-type: none">· Thermal conductivity ($W \cdot m^{-1} \cdot K^{-1}$): 0.8· Number of components: 2· Mix ratio by volume: 2:1· Temperature range: -55 to +160°C (260°C short-term)· Consistency: pasty· Colour: blue	<p>Polytec TC 422 is a pasty, two component epoxy with excellent adhesion, particularly to metals such aluminium and stainless steel. It is used for thermal management in electronics, lighting, hybrid technology, sensor technology and power engineering. It is supplied in a process-convenient side-by-side cartridge, ready for dispensing.</p>

Thermally Conductive Adhesives from Polytec PT



Product name	Features	Application
Polytec TC 423	<ul style="list-style-type: none">· Thermal conductivity ($\text{W}\cdot\text{m}^{-1}\cdot\text{K}^{-1}$): 3.0· Number of components: 2· Mix ratio by weight: 100:1.7· Temperature range: -55 to +160°C (260°C short-term)· Consistency: tough-flowing paste· Colour: blue	<p>Polytec TC 423 is a pasty, two component, highly thermally conductive, electrically insulating epoxy adhesive curing at room temperature. It has an excellent adhesion to glass, metal, ceramic, FR4 and most plastics.</p> <p>Polytec TC 423 is used in various thermal management applications, especially for potting of large volumes in electrical and power engineering.</p>

Thermally Conductive Adhesives from Polytec PT



Product name	Features	Application
Polytec TC 430	<ul style="list-style-type: none">· Thermal conductivity ($W \cdot m^{-1} \cdot K^{-1}$): 0.7· Number of components: 2· Mix ratio by weight: 100:4· Temperature range: -55 to +250°C (350°C short-term)· Consistency: thixotropic paste· Colour: yellow	<p>Polytec TC 430 is a two-component, thermally conductive, electrically insulating epoxy. It is suggested for applications where heat dissipation and insulating properties are required. Typical applications include attaching heat sinks, die attach, die bonding power devices and thermally conductive underfill.</p> <p>Polytec TC 430 has an excellent adhesion to ceramic, glass, semiconductor materials, ferrous and non-ferrous metals and most plastics.</p> <p>Also available pre-mixed, frozen, bubble-free and thixotropic and non-flowing version.</p>

Thermally Conductive Adhesives from Polytec PT



Product name	Features	Application
Polytec TC 432	<ul style="list-style-type: none">· Thermal conductivity ($W \cdot m^{-1} \cdot K^{-1}$): 1.8· Number of components: 2· Mix ratio by weight: 100:7· Temperature range: -55 to +180°C (230°C short-term)· Consistency: thixotropic paste· Colour: white/white	<p>Polytec TC 432 is a thixotropic, two component, highly thermally conductive, electrically insulating epoxy for thermal management in micro and power electronics, energy engineering etc. It has an excellent adhesion to ceramic, glass, semiconductor materials, ferrous and non-ferrous metals and most plastics.</p>

Thermally Conductive Adhesives from Polytec PT



Product name	Features	Application
Polytec TC 433	<ul style="list-style-type: none">· Thermal conductivity ($W \cdot m^{-1} \cdot K^{-1}$): 2.0· Number of components: 2· Mix ratio by weight: 100:5· Temperature range: -55 to +220°C (320°C short-term)· Consistency: thixotropic paste· Colour: white/brown	<p>Polytec TC 433 is a thixotropic, two component, highly thermally conductive, electrically insulating epoxy for thermal management in micro and power electronics, energy engineering etc. It has an excellent adhesion to ceramic, glass, semiconductor materials, ferrous and non-ferrous metals and most plastics.</p>

Thermally Conductive Adhesives from Polytec PT



Product name	Features	Application
Polytec TC 437	<ul style="list-style-type: none">· Thermal conductivity ($W \cdot m^{-1} \cdot K^{-1}$): 0.6· Number of components: 2· Temperature range: -55 to +180°C (230°C short-term)· Mix ratio by weight: 10:1· Consistency: thixotropic paste· Colour: white/yellow	<p>Polytec TC 437 is a two-component, thermally conductive electrically insulating epoxy which can be cured at room temperature within 16 hours. Typically applications include attaching heat sinks, thermally conductive underfill, thermistor potting, die attach and heat management for power semiconductor devices. Excellent adhesion to ceramic, glass, semiconductor materials, metals and most plastics.</p>

Thermally Conductive Adhesives from Polytec PT



Product name	Features	Application
Polytec TC 451	<ul style="list-style-type: none">· Thermal conductivity ($W \cdot m^{-1} \cdot K^{-1}$): 0.80· Number of components: 2· Mix ratio by weight: 100:6· Temperature range: -55 to +180°C (280°C short-term)· Consistency: flowable soft paste· Colour: black	<p>Polytec TC 451 is a thermally conductive, electrically insulating adhesive and potting system with high glass transition temperature. It is used in various applications for bonding, potting, coating and sealing in the automotive and electronics industry.</p> <p>Polytec TC 451 shows an excellent resistance to chemicals and moisture and has a good adhesion to glass, metal, ceramic, ferrite and most plastics.</p>

Thermally Conductive Adhesives from Polytec PT





Safety Data Sheets

For the latest SDS for this product, please e-mail msds@intertronics.co.uk

Other Information

See how **Polytec TC 437** works as part of a real application in this Potting Compound [Case Study](#):

<p>CASE STUDY</p> <p>Polytec TC 437 Thermally conductive epoxy</p>  <p>intertronics adhesives, coatings, sealants & equipment for your manufacturing and technology applications</p> 	<p><u>We pot the green for Variohm with custom thermal potting compound</u></p> <p>Potting compound requiring good thermal conductivity and an extended pot life in a custom made colour.</p>
---	---

Thermally Conductive Adhesives from Polytec PT



Ordering Information

Our technical team are on hand to discuss your application requirements. [Click here](#) to get in touch.

Find out more information on [how to purchase](#).

Supplied by:

intertronics

INTERTRONICS

12a Station Field Industrial Estate, Banbury Road, Kidlington

Oxfordshire England OX5 1JD

t 01865 842842 e info@intertronics.co.uk

Last updated: July 2021 Version: 6.1

Statements, technical information and recommendations contained herein are based on tests we believe to be reliable but they are not to be construed in any manner as warranties expressed or implied. The user shall determine the suitability of the product for his intended use and the user assumes all risk and liability whatsoever in connection therewith.