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## **Polytec TP 230** Thermally Conductive Paste Technical Data

# Polytec TP 230

## Properties

Polytec TP 230 is a highly thermally conductive, silicone-free paste with nonabrasive fillers. It is easy and convenient to use for reworkable heat sinking and thermal management applications in the electronics and automotive industry, e.g., by filling and leveling gaps between parts that will heat up during operation, and the respective cooling plates.

## Features

- Single component , no mixing
- Paste like, easy to dispense
- High thermal conductivity  $\geq 2.3$  W/mK
- Non curing, permanently viscous
- Easy to remove

## Applications

- Thermal connection of modules
- in EV batteries
- Thermal management in power circuits
- Thermal connection in heat exchangers
- And many more

## Processing

- The paste is non curing unlimited pot life
- Simple processing using standard equipment , dispensing from customized containers (cartridges, hobbocks , barrels).
- Process safe, high level of automation achievable.
- Processing at elevated temperatures (e.g. 60 °C) decreases the viscosity and enables good distribution.
- To ensure good thermal contact, attention must be paid to avoid entrapped air.
- The material can be removed by simple wiping, possibly supported by commercially available solvents or cleaners
- For more information, please see respective material safety data sheet

## Suitable container size according to the application

- 310ml cartridges
- 20 l hobbocks
- 200 L barrels

Material and processing properties	Method	Unit	Technical Data
Basis	-	-	silicone-free oil
Filler	-	-	ceramic, non-abrasive
Consistency, appearance	TM 101	-	pasty, yellow
Abrasivity of fillers (Mohs hardness)	-	-	4
Density	TM 201.3	g/cm <sup>3</sup>	2.1
Thermal conductivity (TIM Tester)	TM 503.1	W/mK	2.3
Thermal resistance, depending on layer thickness and pressure	TM 503.1	mm <sup>2</sup> K/W	440
Specific electrical volume resistance at 250 V	TM 402.2	Ω cm	1 · 10 <sup>10</sup>
Dielectric strength	TM 402.2	kV/mm	8
Flammability test based on UL94	UL94	-	V0
Regulation (EU) 2011/65/EU (RoHS)	-	-	RoHS-compliant
Regulation (EG), No . 1907/2006 (REACH)			Does not contain any SVHC substances
Viscosity plate/plate (constant 10 s <sup>-1</sup> at 40°C)	TM 202.7	Pa s	180

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Operating properties and long term properties	Method	Unit	Technical Data
Decomposition temperature	TM 302	°C	>200
Weight loss at 90 °C, 12 W.	-	%	-
Oil separation at 70 °C/98 % , 40° tilt, 12 W.	-	%	0.5
Material compatibility, aluminium, VW PV1200, 12 W.		-	No corrosion
Material compatibility, KTL, vibration test	Cross-cut	-	No damage

Material properties after aging	WLF in W/mK	Density in g/cm <sup>3</sup>	Visc. 40 °C in Pa s
Raw material unaged	2.3	2.1	pasty
Climate test, 12 w. (70 °C, 98 % rel. humidity)	≥2.3	2.1	pasty
Vibration test VW 82161 (-30 ...+ 60 °C, 5 ... 200 Hz, 40 h je x, y, z)	≥2.3	2.1	pasty
Climate change test depending on VW PV-1200, 12 w. (-30 ...+ 60 °C, max. 80 % rel. humidity, 2 cycles/d)	≥2.3	2.1	pasty

Operating properties and durability	Method	Unit	Technical Data
Recommended storage temperature		°C	max. 35
* Freezing temperatures are not critical; please allow for acclimatization minimum 24 h before processing in order to ensure consistent processing properties.			
Curing speed	-	h	none (permanently pasty)
Min. layer thickness @1 bar pressure	TM 612.1	µm	200

## Please note:

The information listed above is typical data based on tests and is believed to be accurate. Polytec PT makes no warranties (expressed or implied) as to their accuracy. The data listed above does not constitute specifications. The processing (particularly the curing conditions) of the material, the process control, and the variety of different applications at various customers are not under Polytec PT's control. Therefore, Polytec PT will not be liable for concrete results in any specific application or in any connection with the use of this product. The curing conditions have a major effect on the properties of the cured material. Therefore, it is highly recommended to keep the curing schedule – once established - under tight control. With the release of this data sheet all former data sheets will be null and void.

Subject to alteration.

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