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Polytec VP 2106-408

Highly Thermally Conductive Paste

Technical Data

Version 6/2024

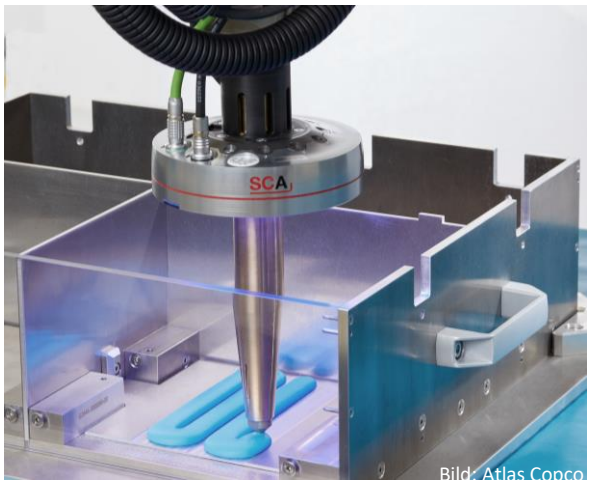
Polytec VP 2106-408

Polytec VP 2106-408 is a highly thermally conductive, silicone-free paste with non-abrasive 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.

- Single-component, no mixing
- Paste-like, easy to dispense
- High thermal conductivity 2.7 W/m·K
- Non-curing
- No hazard, easy to remove

Material Properties	Method	Unit	Value
Basis	-	-	Silicone-free fluid
Fillers	-	-	Ceramic, non-abrasive
Consistency, appearance	TM 101	-	Paste-like, blue
Abrasivity of fillers (Mohs hardness)	-	-	<4 (low)
Density	TM 201	g/cm³	2.1
Thermal conductivity (TIM Tester)	ASTM D5470	W/mK	2.7
Thermal resistance at1 mm gap and 1 N Force	ASTM D5470	mm²K/W	400
Specific electrical volume resistivity @250 V	Gleichstrom	Ω cm	>1 · 10^{10}
Dielectic strength	Gleichstrom	kV/mm	>8
Specific heat capacity @RT	DSC	J/gK	1.2
Inflammability based on UL94	UL 94	-	V0
Regulation (EG) No. 1272/2008 (CLP)	-	-	No hazard
Regulation (EU) 2011/65/EU (RoHS)	-	-	RoHS compliant
Regulation (EG) No. 1907/2006 (REACH)			compliant

Processing Properties	Method	Unit	Value
Recommended storage temperature*		°C	max. 35
*Freezing temperatures are not critical; please allow for acclimatization minimum 24 hrs before processing in order to ensure consistent processing properties.			
Curing time	-	h	None (permanently viscous)
Viscosity plate/plate (constant 10 s^{-1} @40 °C)	TM 202.7	Pa s	160
min. layer thickness @1 bar pressure	-	µm	250



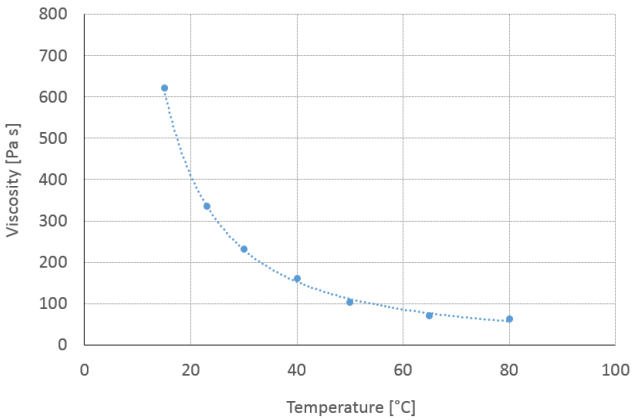


Fig. 1: VP 2106-408 Thermally Conductive Paste, viscosity vs. temperature (typical values).

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.

Operating Properties and Durability	Method	Unit	Value
Decomposition temperature	TM 302	°C	>200
Mass loss @80 °C, 12 w.	-	% weight	0.5 %
Oil separation @70 °C/98 % r.h., 40° tilt, 12 w.	-	% weight	0.5 %
Compatibility to glas, aluminum and KTL	Cross-cut test	-	no damage

Material Properties after Aging	Thermal conductivity in W/mK	Specific gravity in g/cm³	Viscosity @40 °C in Pa s
Original	≥2.7	2.1	ca. 150
After damp-heat test, 12 w. (70 °C, 98 % rel. humidity)	≥2.7	2.1	pasty
After vibration test (VW 82161) (-20 …+ 65 °C, 5 … 200 Hz, 40 h each x, y, z)	≥2.7	2.1	pasty
After alternating climate test (VW PV-1200), 12 w. (-40 …+ 80 °C, max. 80 % r.h., 2 cycles/d)	≥2.7	2.1	pasty

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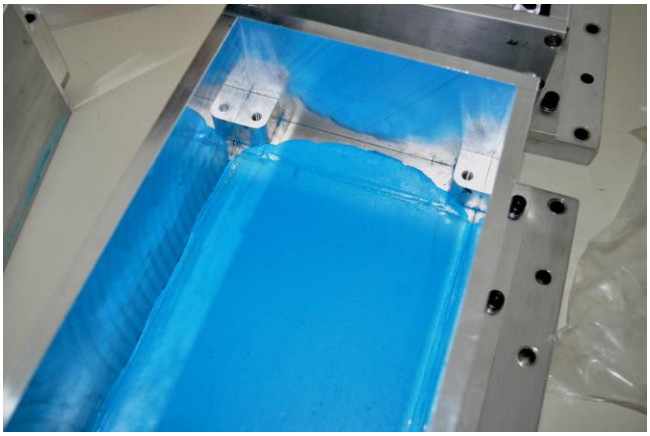
Applications

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



Containers matching the application:

- 310ml cartridge
- 1 kg jars
- 20 l hobbocks
- 200 L barrels

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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