



TRANSTHERM® THERMALLY CONDUCTIVE PHASE CHANGE MATERIAL

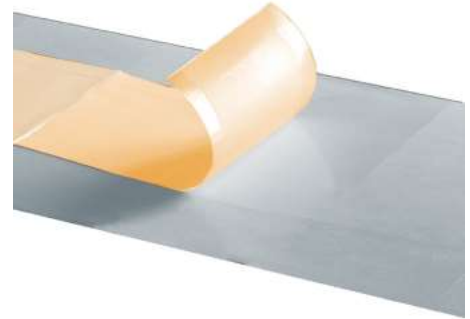
TRANSTHERM® PHASE CHANGE MATERIALS

Transtherm® Thermally Conductive Phase Change Materials (PCMs) are thin wax-like materials designed to melt at a specific temperature. While the PCM absorbs heat, it completely wets-out across the surface achieving an extremely thin bond line. This provides excellent temperature control, close contact between surfaces, and minimal thermal resistance.

Once the phase change temperature is first exceeded, optimal thermal performance is maintained above and below the melt temperature. Phase Change Materials are best for thermally conductive applications that require good wet out on surfaces with little or no force. While the PCM is soft or in its liquid state, excessive pressure will squeeze out extra material from in between the surfaces.

Phase Change Materials are temperature sensitive where they may reach their phase change temperature during transport. We recommend keeping stock in a temperature-controlled environment during summer or in warmer climates.

Boyd's Transtherm® Phase Change Materials conform with REACH and RoHS regulations.



ORDERING INFORMATION

Contact your Boyd representative for more information or contact us at www.boydcorp.com/boyd-contact

Part Number	Structure Type	Thermal Conductivity (W/mK)
PC07	A	4.4
PC03-MT1-2021	B	1.2
PC08	B	1.6
KG	C	0.45
PC03-MT-100	C	1.6
PC09	C	1.6
PC03-AL-2021	D	3.9
PC03-AL	E	4.5
ALC5	E	5.6
ALF5 / ALF5-H2	E	13.1

Structure	Illustration	Description
A		Phase Change Material
B		Phase Change Material Polyimide Adhesive
C		Phase Change Material Polyimide Phase Change Material
D		Phase Change Material Aluminum Adhesive
E		Phase Change Material Aluminum Phase Change Material



TRANSTHERM® THERMALLY CONDUCTIVE PHASE CHANGE MATERIAL

MATERIAL PROPERTIES

Without Reinforcement: Structure A

Properties	PC07* ¹	Units
Color	Grey	-
Total Thickness	0.2 ± 0.02	mm
Phase Change Material	Wax	-
Structure	A	-
Breakdown Voltage	Not Electrically Isolating	V (AC)
Thermal Conductivity	4.4	W/mK
Thermal Resistance – inch ² (cm ²)	0.84 (5.42)	°C/W
Continuous Usage Temperature	- 40 to +125	°C
Phase Change Temperature	50	°C
Tackiness	N/A	-
Flame Rating (UL 94)	N/A	-



*¹ Known as BCTIM-220-1054

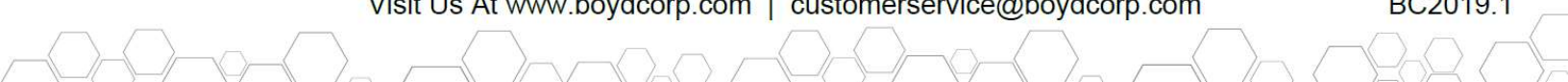
With Reinforcement: Structures B & C

Properties	PC03-MT1-2021	PC08* ²	KG* ⁴	PC03-MT-100	Units
Color	Yellow	Yellow	Orange	Yellow	-
Reinforcement Thickness	0.025	0.025	0.025 0.038 0.050	0.025	mm
Total Thickness	0.1 ± 0.01	0.1 ± 0.01	0.050 ± 0.01 0.065 ± 0.015 0.075 ± 0.015	0.1 ± 0.01	mm
Approx. PCM Coating Thickness	0.038	0.05	0.012	0.038	-
Phase Change Material	Acrylic	Wax	Crayotherm® Wax	Acrylic	-
Structure	B	B	C	C	-
Breakdown Voltage	5000	5000	4200 6000 7700	5000	V (AC)
Thermal Conductivity	1.2	1.6	0.45	1.6	W/mK
Thermal Resistance – inch ² (cm ²)	0.26 (1.680)	N/A	0.12 (0.774) 0.16 (1.032) 0.20 (1.290)	0.20 (1.29)	°C/W
Continuous Usage Temperature	- 40 to +150	- 40 to +150	- 60 to +150	- 40 to +150	°C
Phase Change Temperature	60	60	60	60	°C
Flame Rating (UL 94)	V1	N/A	V0	V0	-

*² Known as BCTIM-220-1056

*³ Known as KU-EPC25 & KU-EPC50

*⁴ Known as KU-KG25, KU-KG38, & KU-KG50





TRANSTHERM® THERMALLY CONDUCTIVE PHASE CHANGE MATERIAL

MATERIAL PROPERTIES

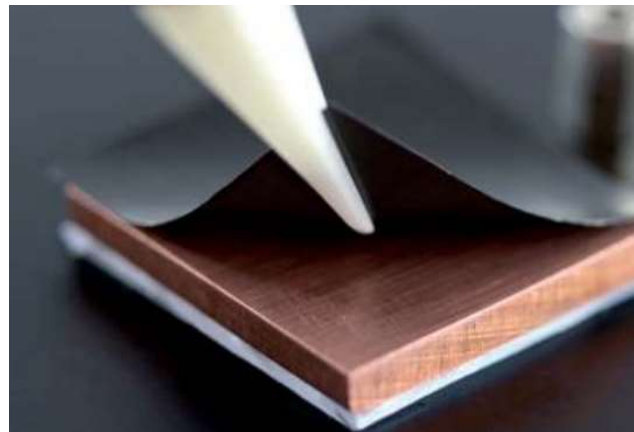
With Reinforcement: Structures C, D, & E

Properties	PC09* ⁵	PC03-AL-2021	PC03-AL	ALC5* ⁶	ALF5/ ALF5-H2* ⁷	Units
Color	Yellow	White	White	Light Grey	Black	-
Reinforcement Thickness	0.025	0.025	0.025	0.051	0.051	mm
Total Thickness	0.1 ± 0.01	0.13 ± 0.02	0.112 - 0.022/ + 0.028	0.075 ± 0.015	0.075 ± 0.015 0.105 ± 0.015	mm
Approx. PCM Coating Thickness	0.05	0.03	0.03	0.0125	0.0125 0.0225	
Phase Change Material Structure	Wax	Acrylic	Acrylic	Crayotherm® Wax	Crayotherm® Wax	-
	C	D	E	E	E	-
Breakdown Voltage	5000	Not Electrically Isolating	Not Electrically Isolating	Not Electrically Isolating	Not Electrically Isolating	V (AC)
Thermal Conductivity	1.6	3.9	4.5	5.6	13.1	W/mK
Thermal Resistance – inch ² (cm ²)	N/A	0.049 (0.316)	0.12 (0.774)	0.021 (0.135)	0.009 (0.058) 0.012 (0.077)	°C/W
Continuous Usage Temperature	- 40 to +150	- 40 to +150	- 40 to +150	- 60 to +150	- 60 to +150	°C
Phase Change Temperature	60	60	60	60	51	°C
Tackiness	N/A	One Side	N/A	N/A	N/A	-
Flame Rating (UL 94)	N/A	N/A	N/A	N/A	N/A	-

*⁵ Known as BCTIM-220-1072

*⁶ Known as KU-ALC5

*⁷ Known as KU-ALF5 & KU-ALF/H2



Disclaimer: Boyd Corporation disclaims all liability for accuracy of this information. The data in this document are only for general information purposes. Please confirm compatibility with your applications prior to use. For advice, please contact a Boyd Representative. Technical details are subject to change without notice.

To maintain the material integrity, recommended storage temperature is between +10°C to +35°C with a humidity of 23% to 71%. Exposure to direct sunlight or direct pressure on packaging or parts is prohibited. Process material at +20°C and above.

