

Overview of hotmelt moulding materials



THERMELT®	181	195	817	858	861	865	866	867	868W	869
-----------	-----	-----	-----	-----	-----	-----	-----	-----	------	-----

Product properties (average values)

Limit temperatures for use (*) [°C]	-20/+140	-20/+170	-15/+125	-40/+150	-40/+125	-55/+120	-25/+115	-40/+150	-40/+125	-40/+125
Application temperature [°C]	200/220	210/230	180/210	210/230	190/210	190/210	190/210	220/230	190/210	190/210
Softening point (Cup & Ball) [°C]	173	202	168	183	160	158	153	180	160	160
Brookfield viscosity [Pa.s]	4	4	0.6	5.5	3.4	3	3	2.5	3.5	3.5
Brookfield viscosity at [°C]	200	232	205	220	200	210	190	220	200	200
Open time (**) [s]	5	3	5	6	8	10	10	7	8	8
Thermal stability min. [h]	10	1	8	8	12	12	8	8	7	7
Tensile strength [Mpa]	11	17	4	13	3.5	3	2	6	2.5	3.5
Elongation at break [%]	500	630	100	637	300	500	500	500	200	500
Shore hardness A	98	98	82	98	90	80	80	94	90	90
Shore hardness D	53	56	30	44	35	26	25	40	35	35
Low temperature brittleness temperature [°C]	-35	-30	-15	-27	-35	-55	-30	-40	-35	-35
Moisture absorption (at 23°C and 50% RH)	~0.5	~0.5	~0.3	~0.6	0.6	~0.6	~0.6	0.6	0.6	0.6

Electrical properties

Mass specific resistivity [$\Omega \cdot \text{cm}$]	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}
Surface specific resistivity [Ω]	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Dielectric rigidity [kV/cm]	~190	~190	~220	~190	190	~190	~190	~190	~190	190
Dielectric permittivity 50Hz	n.d.	n.d.	8	n.d.	5	6	6	5	5	5

Thermal properties

Thermal conductivity at 23°C [W/m.°K]	~0.2	~0.2	~0.2	~0.2	~0.2	~0.2	~0.2	~0.2	~0.2	~0.2
Thermal conductivity at 180°C [W/m.°K]	~0.6	~0.6	~0.66	~0.6	~0.6	~0.6	~0.6	~0.6	~0.6	~0.6
α coefficient of linear expansion of basic material [ppm/°K]	200-300	200-300	200-300	200-300	200-300	200-300	200-300	200-300	200-300	200-300
IMDS natural IMDS black	68207410	6113151 68207210	8123099 6097357	68987754 67989444	5235748 6113623	5235748 6113623	36470937 36471252	5235748 6113623		5235748 6113623
UL 94 flammability test	V0	V2.	V0	V0.	V0	V2	V2	V0	V0	V2
CTI (Comparative Tracking Index) [V]	n.d.	n.d.	> 600	n.d.	(1)	> 600	(1)	> 600	> 600	> 600

(1) CTI at least > 600 – however, tests not performed. (*) To be determined according to service and/or testing conditions. If necessary consult Bostik TRL s.a.

(**) Open time: determined at 23°C on a 1mm hot melt layer on aluminium. n.d. = not determined



Werner Wirth Systems GmbH
Hellgrundweg 111
22525 Hamburg
Germany

Tel +49 (0)40 878 86 89-0
Fax +49 (0)40 878 86 89-26

systems@wernerwirth.de
www.ww-systems.de



THERMELT®	1564	2967	PAR1000	PAR1001	PAR1002	9950	9955
-----------	------	------	---------	---------	---------	------	------

Product properties (average values)

Limit temperatures for use (*) [°C]	-10/+90	-25/+125	-40/+200	-55/+200	-55/+200	-40/+150	-50/+120
Application temperature [°C]	190/210	200/230	190/200	160/190	~190	240	240
Softening point (Cup & Ball) [°C]	141	163	163	146	141	197	160
Brookfield viscosity [Pa.s]	3	10	2	2	2.5	70	50
Brookfield viscosity at [°C]	190	210	177	150	190	200	200
Open time (**) [s]	15	10	8	10	10		
Thermal stability min. [h]	9	6	/	/	/	/	/
Tensile strength [Mpa]	3	6	6	2	3.2	9	4,3
Elongation at break [%]	375	600	210	100	144	500	1300
Shore hardness A	80	90	80	70	75	94	70
Shore hardness D	31	39	30	16	19	38	16
Low temperature brittleness temperature [°C]	-12	-20	-35	-55	-55	-65	-77
Moisture absorption (at 23°C and 50% RH)	0.4	~0.4	~0.6	~0.6	~0.6	0,3	0,4

Electrical properties

Mass specific resistivity [$\Omega \cdot \text{cm}$]	10^{11}	10^{11}	10^{11}	10^{11}	10^{11}	10^{12}	10^{12}
Surface specific resistivity [Ω]	10^{13}	10^{13}	n.d.	n.d.	n.d.	$5 \cdot 10^{12}$	$5 \cdot 10^{12}$
Dielectric rigidity [kV/cm]	~190	~190	~190	~190	~190	200	200
Dielectric permittivity 50Hz	6	n.d.	n.d.	n.d.	n.d.	4,8	4,7

Thermal properties

Thermal conductivity at 23°C [W/m.°K]	~0.2	~0.2	n.d.	n.d.	n.d.	0.2	0.2
Thermal conductivity at 180°C [W/m.°K]	~0.6	~0.6	n.d.	n.d.	n.d.	0,14	0,14
α coefficient of linear expansion of basic material [ppm/°K]	200-300	200-300	200-300	200-300	200-300	190	190
IMDS natural IMDS black	5235748 6113623	5235748 6113623	11008383 36444990	11008383		65145515	65154204
UL 94 flammability test	n.d.	n.d.	n.d.	n.d.	n.d.	V2	V2
CTI (Comparative Tracking Index) [V]	(1)	(1)	n.d.	n.d.	n.d.	> 600	> 600

(1) CTI at least > 600 – however, tests not performed. (*) To be determined according to service and/or testing conditions. If necessary consult Bostik TRL s.a.

(**) Open time: determined at 23°C on a 1mm hot melt layer on aluminium. n.d. = not determined

These values are provided in accordance with expert knowledge by BOSTIK TRL s.a. and Werner Wirth Systems GmbH. They are for guidance only and are by no means binding. The user will remain solely responsible for the processing and application of our products. In view of the many forms of utilisation and application conditions, users are requested to carry out their own approval testing before any use. In order to improve the quality and performance of our products, BOSTIK TRL s.a. and die Werner Wirth Systems GmbH reserve the right to modify the composition or properties of their products at any time without prior notification.



Werner Wirth Systems GmbH
Hellgrundweg 111
22525 Hamburg
Germany

Tel +49 (0)40 878 86 89-0
Fax +49 (0)40 878 86 89-26

systems@wernerwirth.de
www.ww-systems.de

Overview of hotmelt moulding materials



THERMELT®	181	195	817	858	861	865	866	867	868W	869
-----------	-----	-----	-----	-----	-----	-----	-----	-----	------	-----

Adhesion properties

Metals (2) (AL/CU-alloys+steel)	B	B	A	A	A	A	A	A	A	A
Glas (2)	C	C	B	A	A	A	A	A	A	A
Ceramic (2)	C	C	B	A	A	A	A	A	A	A
PVC ployvinylchloride (soft+hard)	-	-	B	A	A	A	A	A	A	A
PE Polyethylene (1)	-	-	-	-	B	B	B	-	B	B
PP Polypropylene (1)	-	-	-	-	B	B	B	-	B	B
PBTP Polybutylene terephthalate	-	-	C	B	B	B	A	B	B	B
PETP Polyethylene terephthalate	-	-	C	B	B	B	A	B	B	B
EP Polyepoxyd resins	-	-	B	B	B	B	B	B	B	B
PS Polystyrene	-	-	C	C	C	C	C	C	C	C
ABS Acrylonitrile butadiene styrene	-	-	B	A	A	A	A	A	A	A
PPO Polyphenylenoxyde	-	-	A	B	B	A	B	B	B	B
PA Polyamides	-	-	B	B	A	A	B	B	A	A
PC Polycarbonates	-	-	C	B	A	A	A	B	A	A
PUR Polyurethanes	-	-	C	C	C	C	C	C	C	C

Remarks: (1) with Corona or flaming pre-treatment, (2) preheating of substrate necessary
 Rating: A = excellent, B = good, C = acceptable, - = bad adhesion

These values are provided in accordance with expert knowledge by BOSTIK TRL s.a. and Werner Wirth Systems GmbH. They are for guidance only and are by no means binding. The user will remain solely responsible for the processing and application of our products. In view of the many forms of utilisation and application conditions, users are requested to carry out their own approval testing before any use. In order to improve the quality and performance of our products, BOSTIK TRL s.a. and die Werner Wirth Systems GmbH reserve the right to modify the composition or properties of their products at any time without prior notification.



Werner Wirth Systems GmbH
 Hellgrundweg 111
 22525 Hamburg
 Germany

Tel +49 (0)40 878 86 89-0
 Fax +49 (0)40 878 86 89-26

systems@wernerwirth.de
 www.ww-systems.de

Overview of hotmelt moulding materials



THERMELT®	1564	2967	PAR1000	PAR1001	PAR1002	9950	9955
Adhesion properties							
Metals (2) (AL/CU-alloys+steel)	A	A	A	A	A	C	C
Glas (2)	A	A	A	A	A	C	C
Ceramic (2)	A	A	A	A	A	-	-
PVC ployvinylchloride (soft+hard)	A	A	A	A	A	A	A
PE Polyethylene (1)	B	B	B	B	B	C	C
PP Polypropylene (1)	B	B	B	B	B	-	-
PBTP Polybutylene terephthalate	B	B	B	B	B	C	B
PETP Polyethylene terephthalate	B	B	B	B	B	B	A
EP Polyepoxyd resins	B	B	B	B	B	C	C
PS Polystyrene	C	C	C	C	C	B	A
ABS Acrylonitrile butadiene styrene	A	A	A	A	A	A	A
PPO Polyphenylenoxyde	B	B	B	B	B	-	C
PA Polyamides	B	B	B	B	B	-	-
PC Polycarbonates	B	B	B	B	B	A	A
PUR Polyurethanes	C	C	C	C	C	B	A

Remarks: (1) with Corona or flaming pre-treatment, (2) preheating of substrate necessary
 Rating: A = excellent, B = good, C = acceptable, - = bad adhesion

These values are provided in accordance with expert knowledge by BOSTIK TRL s.a. and Werner Wirth Systems GmbH. They are for guidance only and are by no means binding. The user will remain solely responsible for the processing and application of our products. In view of the many forms of utilisation and application conditions, users are requested to carry out their own approval testing before any use. In order to improve the quality and performance of our products, BOSTIK TRL s.a. and die Werner Wirth Systems GmbH reserve the right to modify the composition or properties of their products at any time without prior notification.



Werner Wirth Systems GmbH
 Hellgrundweg 111
 22525 Hamburg
 Germany

Tel +49 (0)40 878 86 89-0
 Fax +49 (0)40 878 86 89-26

systems@wernerwirth.de
 www.ww-systems.de

Overview of hotmelt moulding materials



THERMELT®	181	195	817	858	861	865	866	867	868W	869
-----------	-----	-----	-----	-----	-----	-----	-----	-----	------	-----

Chemical resistance

Cooling liquid	A	A	A	A	A	A	A	A	A	A
Protection waxes	A	A	A	A	A	A	A	A	A	A
Dewaxing agent	A	A	A	A	A	A	A	A	A	A
Cold cleaning agent	A-B	A-B	A-B	A-B	A-B	A-B	A-B	A-B	A-B	A-B
Methylated spirit (IMS)	B	B	B	B	B	B	B	B	B	B
Gas oil	A	A	A	A	A	A	A	A	A	A
FAM test spirit	B	B	B	B	B	B	B	B	B	B
Battery acid	A	A	A-B	A-B	A-B	A-B	B	A-B	A-B	A-B
Brake fluid	A	A	A	A	A	A	A	A	A	A
Motor oil	A	A	A	A	A	A	A	A	A	A
Gearbox oil	A	A	A	A	A	A	A	A	A	A
ATF automatic transmission fluid	A	A	A	A	A	A	A	A	A	A
Dry cleaner	A	A	A	A	A	A	A	A	A	A
M15 fuel	A	A	A	A	A	A	A	A	A	A

Testing method for chemical resistance: All chemicals, except FAM fuel, spraying for 20 secs, then 48 hours drying at 70 °C FAM fuel 1 hour in fuel vapours, then 48 hours drying at 70 °C. Expected behaviour: A = no noticeable attack, B = slight attack, C = strong attack

These values are provided in accordance with expert knowledge by BOSTIK TRL s.a. and Werner Wirth Systems GmbH. They are for guidance only and are by no means binding. The user will remain solely responsible for the processing and application of our products. In view of the many forms of utilisation and application conditions, users are requested to carry out their own approval testing before any use. In order to improve the quality and performance of our products, BOSTIK TRL s.a. and die Werner Wirth Systems GmbH reserve the right to modify the composition or properties of their products at any time without prior notification.



Werner Wirth Systems GmbH
 Hellgrundweg 111
 22525 Hamburg
 Germany

Tel +49 (0)40 878 86 89-0
 Fax +49 (0)40 878 86 89-26

systems@wernerwirth.de
 www.ww-systems.de

Overview of hotmelt moulding materials



THERMELT®	1564	2967	PAR1000	PAR1001	PAR1002	9950	9955
-----------	------	------	---------	---------	---------	------	------

Chemical resistance

Cooling liquid	A	A	A	A	A	A	A
Protection waxes	A	A	A	A	A	A	A
Dewaxing agent	A	A	A	A	A	A	A
Cold cleaning agent	A-B	A-B	A-B	A-B	A-B	A	A
Methylated spirit (IMS)	B	B	B	B	B	A	A
Gas oil	A	A	A	A	A	A	A
FAM test spirit	B	B	B	B	B	A	A
Battery acid	A	A-B	A-B	A-B	A-B	B	B
Brake fluid	A	A	A	A	A	A	A
Motor oil	A	A	A	A	A	A	A
Gearbox oil	A	A	A	A	A	A	A
ATF automatic transmission fluid	A	A	A	A	A	A	A
Dry cleaner	A	A	A	A	A	A	A
M15 fuel	A	A	A	A	A	A	A
E 85 fuel						A	A
Water						A	A
Chlorinated solvents						C	C
Gas oil M20						A	A
Acetone						C	C

Testing method for chemical resistance: All chemicals, except FAM fuel, spraying for 20 secs, then 48 hours drying at 70 °C FAM fuel 1 hour in fuel vapours, then 48 hours drying at 70 °C. Expected behaviour: A = no noticeable attack, B = slight attack, C = strong attack

These values are provided in accordance with expert knowledge by BOSTIK TRL s.a. and Werner Wirth Systems GmbH. They are for guidance only and are by no means binding. The user will remain solely responsible for the processing and application of our products. In view of the many forms of utilisation and application conditions, users are requested to carry out their own approval testing before any use. In order to improve the quality and performance of our products, BOSTIK TRL s.a. and die Werner Wirth Systems GmbH reserve the right to modify the composition or properties of their products at any time without prior notification.



Werner Wirth Systems GmbH
 Hellgrundweg 111
 22525 Hamburg
 Germany

Tel +49 (0)40 878 86 89-0
 Fax +49 (0)40 878 86 89-26

systems@wernerwirth.de
 www.ww-systems.de