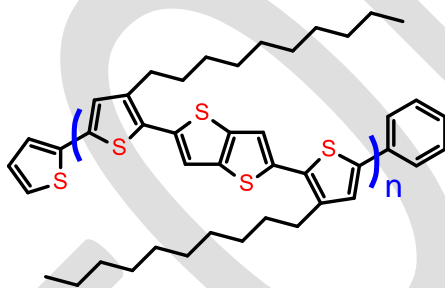




## Technical Data Sheet

1M Material: PBTTT-C10  
Other Names: PBTTT-10, PBTTT-C10  
Remark: Liquid crystalline polymer, reproducible molecular weight  
Chemical name: poly(2,5-bis(3-decylthiophen-2-yl)thieno[3,2-*b*]thiophene)  
Chemical structure:



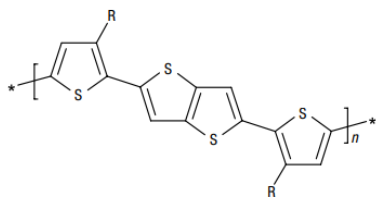
For you: Different Mw ranges at your choice

Grade	Low Mw	Medium	High Mw
Appearance	Brown	Deep Brown	Purple-brown
Molecular Weight (Mw)	< 20K	20-40K	>40K
PDI	2.0	2.5	2.5
Solubility (extract solvent)	DCM	CF	CB
Availability	In stock	In stock	In stock

1-Material is dedicated to provide the material according to customer's needs, and some material we promoted may be solely offered to certain customers for their specific needs in their research and development projects on a custom synthesis basis or on a contract research basis. All the material is offered as it is, along with the information and technical advice-where verbal, in writing or by way of trials-are given in good faith and are believed to be accurate but without warranty since the conditions of use are beyond the control of 1-Material, and this also applies where proprietary rights of third parties are involved. For the condition and term of our offer and service, please consult the disclaimer in our web: [www.1-material.com](http://www.1-material.com)

# PBTTT-10

## References



PBTTT-C10: R=C<sub>10</sub>H<sub>23</sub>

PBTTT-C12: R=C<sub>12</sub>H<sub>25</sub>

PBTTT-C14: R=C<sub>14</sub>H<sub>29</sub>

PBTTT-C16: R=C<sub>16</sub>H<sub>33</sub>

**Table 1** Polymer properties.  $T_{1\uparrow}$  and  $T_{2\uparrow}$  correspond to the low- and high-temperature endotherms on heating (at  $10^\circ\text{C min}^{-1}$ ) respectively, and  $T_{2\downarrow}$  and  $T_{1\downarrow}$  correspond to the high- and low-temperature exotherms on cooling ( $10^\circ\text{C min}^{-1}$ ) respectively. IP was measured by an ambient ultraviolet photoelectron spectroscopy (UPS) technique.

Sidechain	Mn/Mw	$\lambda_{\text{max}}$ (nm)	IP (eV)	$T_{1\uparrow}$ ( $^\circ\text{C}$ )	$T_{2\uparrow}$ ( $^\circ\text{C}$ )	$T_{2\downarrow}$ ( $^\circ\text{C}$ )	$T_{1\downarrow}$ ( $^\circ\text{C}$ )	Cooling enthalpy		$\mu_{\text{max sat}}$ (N <sub>2</sub> ) ( $\text{cm}^2\text{ V}^{-1}\text{ s}^{-1}$ )	$\mu_{\text{max lin}}$ (N <sub>2</sub> ) ( $\text{cm}^2\text{ V}^{-1}\text{ s}^{-1}$ )	ON/OFF ratio (N <sub>2</sub> )
								$T_{2\downarrow}$ (J g <sup>-1</sup> )	$T_{1\downarrow}$ (J g <sup>-1</sup> )			
C10	28,500/51,300			171	251	237	142	13.1	18.5	0.30	0.22	10 <sup>6</sup>
C12	29,600/54,000	547	5.1	143	244	233	115	10.1	20.5	0.30	0.11	10 <sup>6</sup>
C14	33,000/59,600			141	248	233	102	11.3	26.5	0.63	0.39	> 10 <sup>7</sup>
										0.72*	0.20*	> 10 <sup>6</sup> *

\* Different device geometry ( $W = 2,000\ \mu\text{m}$ ,  $L = 5\ \mu\text{m}$ ) and dielectric thickness (200 nm).

## Other Suggested Materials

Reference or common name	1M Code	CAS No.
PBTTT-12, PBTTT-C12	OS0187	888491-18-7
PBTTT-14, PBTTT-C14	OS0198	888491-19-8
PBTTT-16, PBTTT-C16	OS0844	958239-84-4
IBT-BT, C16-IDT-BT, IDT-BT-C16	OS2383	1209012-38-3
IIDDT, IIDDT-C20, PIID-BT	OS0668	1351240-66-8
DTT-DPP, PDPP2T-TT-OD, OD-PDPP2T-TT	OS0662	1260685-66-2
CDT-BTZ-C16, P4	OS0670	1079041-67-0
F4TCNQ	OS9675	2662369-67-5
F6TCNNQ, F6TNAP	OS2156	912482-15-6

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