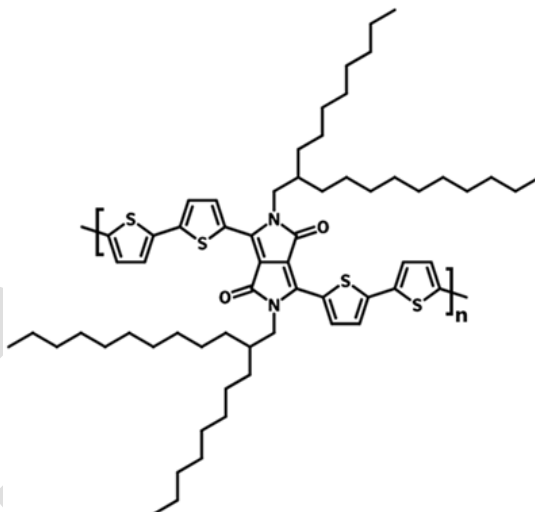


CERTIFICATE OF ANALYSIS

1M Material: PDPP4T, DPP4T, DPP-4T, pDPP, PDQT
CAS No.: 1267540-03-3
Chemical Name: Poly[2,5-bis(2-octyldodecyl)pyrrolo[3,4-c]pyrrole-1,4(2H,5H)-dione -3,6-diyl)-alt-(2,2';5',2'';5'',2'''-quaterthiophen-5,5'''-diyl)]
Chemical Structure:



Lot number: SX12183CH
Appearance: Shine deep purple solid
Molecular weight (GPC): ~80K (Mw, PS Standard), polydispersity(PDI): ~2.0
Solubility: Soluble in CHCl₃, CB, ODCB and other selected solvents
NMR analysis: Structure confirmed
Purity: 99+% (basing on NMRs of monomers)
Reference: HOMO = -5.2 eV, LUMO = -4.0 eV