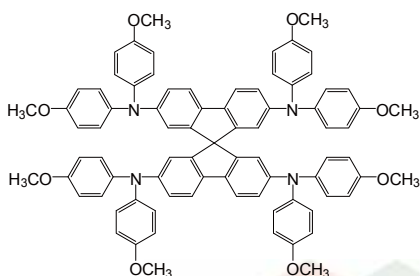


LT-S922 Spiro-MeOTAD

2,2',7,7'-Tetrakis(*N,N*-di-*p*-methoxyphenylamino)-9,9'-spirobifluorene

CAS No. : 207739-72-8
 Grade : > 99.5% (HPLC)
 Formula : $C_{81}H_{68}N_4O_8$
 M.W. : 1225.43 g/mole
 UV : 306, 385 nm (in CH_2Cl_2)
 PL : 429 nm (in CH_2Cl_2)
 TGA : > 360 °C (0.5% weight loss)

Reference : 1.MRS. BULLETIN, 30, 2005, p23
 2.Appl. Phys. Lett. 100, 173512 (2012)

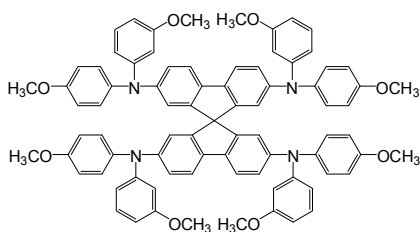


LT-S9145 p,m-Spiro-MeOTAD

N^2,N^2,N^2,N^2 -Tetrakis(3-methoxyphenyl)- N^2,N^2,N^2,N^2 -tetrakis(4-methoxyphenyl)-9,9'-spirobifluorene-2,2',7,7'-tetraamine

CAS No. : 1573202-44-4
 Grade : > 99% (HPLC)
 Formula : $C_{81}H_{68}N_4O_8$
 M.W. : 1225.43 g/mole
 UV : 308, 378 nm (in CH_2Cl_2)
 PL : 414 nm (in CH_2Cl_2)
 TGA : > 280 °C (0.5% weight loss)

Reference : J. Am. Chem. Soc. 2014, 136, 7837-7840

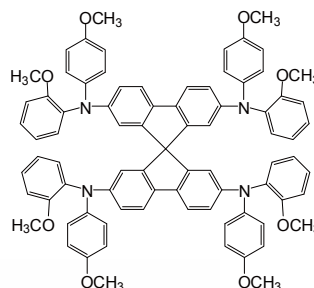


LT-S9146 p,o-Spiro-MeOTAD

N^2,N^2,N^2,N^2 -Tetrakis(2-methoxyphenyl)- N^2,N^2,N^2,N^2 -tetrakis(4-methoxyphenyl)-9,9'-spirobifluorene-2,2',7,7'-tetraamine

CAS No. : 1628961-22-7
 Grade : > 98.5% (HPLC)
 Formula : $C_{81}H_{68}N_4O_8$
 M.W. : 1225.43 g/mole
 UV : 316, 375 nm (in CH_2Cl_2)
 PL : 418 nm (in CH_2Cl_2)
 TGA : > 280 °C (0.5% weight loss)

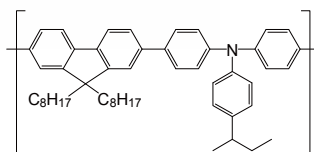
Reference : J. Am. Chem. Soc. 2014, 136, 7837-7840



LT-N148 TFB

Poly[(9,9-dioctylfluorenyl-2,7-diyl)-co-(4,4'-(*N*-(4-*sec*-butylphenyl)diphenylamine)]

CAS No. : 220797-16-0
 Grade : $M_w > 30,000$ (GPC)
 Formula : $(C_{51}H_{51}N)_n$
 UV : 389 nm (in CH_2Cl_2)
 PL : 443 nm (in CH_2Cl_2)
 Solubility : Soluble in CH_2Cl_2 , Toluene, $CHCl_3$

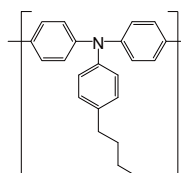


LT-N149 Poly-TPD

Poly[*N,N'*-bis(4-butylphenyl)-*N,N'*-bis(phenyl)-benzidine]

CAS No. : 472960-35-3
 Grade : $M_w > 10,000$ (GPC)
 Formula : $(C_{22}H_{21}N)_n$
 UV : 371, 388 nm (in CH_2Cl_2)
 PL : 424 nm (in CH_2Cl_2)
 Solubility : Soluble in $CHCl_3$, Chlorobenzene

Reference : Nature Photonics 8, 128-132 (2014)

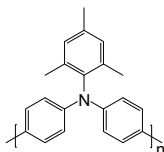


LT-N168 | PTAA

Poly[bis(4-phenyl)(2,4,6-trimethylphenyl)amine]

CAS No. : 1333317-99-9
 Grade : $M_w > 10,000$ (GPC)
 Formula : $(C_{21}H_{19}N)_n$
 UV : 371, 388 nm (in CH_2Cl_2)
 PL : 424 nm (in CH_2Cl_2)
 Solubility : Soluble in $CHCl_3$, Chlorobenzene, Dichlorobenzene

Reference : *Nature Photonics* 7, 486-491 (2013)

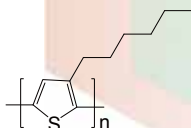


LT-S909 | P3HT

Poly(3-hexylthiophene-2,5-diyl)

CAS No. : 104934-50-1
 Grade : $M_w > 45,000$ (GPC)
 Regioregular Electronic Grade > 93%
 Formula : $(C_{10}H_{14}S)_n$
 UV : 445 nm (in THF)
 PL : 564 nm (in THF)
 Solubility : Soluble in $CHCl_3$, Chlorobenzene, Dichlorobenzene

Reference : *Journal of Power Sources*, 251, (2014), 152-156



LT-PS001 | PEDOT:PSS

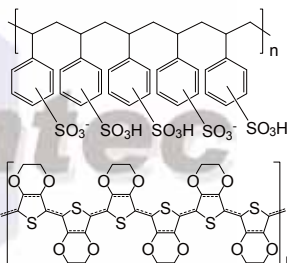
Poly(3,4-ethylenedioxythiophene)-poly(styrenesulfonate)

Specification
 Description : Aqueous dispersion, blue liquid.
 Sodium : Max. 400 ppm
 Sulfate : Max. 40 ppm
 Solid content : 1.3 - 1.7 wt%
 PSD d_{50} : 80 nm
 PSD d_{90} : 100 nm
 Resistivity : 500-5000 Ωcm
 Viscosity : 5-12 mPas

Technical Data (guide values, not a specification)

Form : liquid
 Odour : odourless
 Colour : dark blue
 PEDOT:PSS ratio : 1:6 (by weight)
 PEDOT work function : approx 5.2 eV
 pH : 1.2 - 2.2 at 20°C
 Boiling Point : approx 100°C

Storage : The product is sensitive to frost and should therefore not be stored at temperatures below 5°C.
 Avoid freezing!

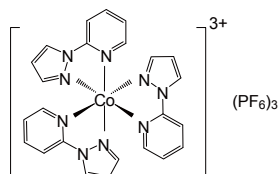


LT-S9135 | FK102 Co(III) PF₆-Salt

Tris(1-(pyridin-2-yl)-1H-pyrazol)cobalt(III) tris(hexafluorophosphate)

CAS No. : 1346416-70-3
 Grade : > 99% (NMR)
 Formula : C₂₄H₂₁CoF₁₈N₉P₃
 M.W. : 1169.43 g/mol
 E⁰_{2+/3+} : 0.96 V vs NHE

Reference : *J. Am. Chem. Soc.*, 2011, 133, 18042-18045

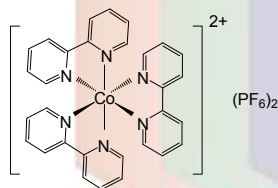


LT-S9183 | Co(II)(bpy)₃(PF₆)₂

Tris-(2,2'-bipyridine)cobalt(II) bis(hexafluorophosphate)

CAS No. : 79151-78-3
 Grade : > 99% (HPLC)
 Formula : C₃₀H₂₄CoF₁₂N₆P₂
 M.W. : 817.41 g/mol
 E⁰_{2+/3+} : 0.56 V vs NHE

Reference : *J. Am. Chem. Soc.*, 2010, 132, 16714

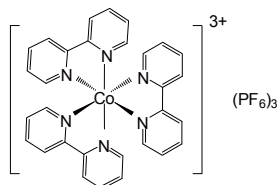


LT-S9184 | Co(III) (bpy)₃(PF₆)₃

Tris-(2,2'-bipyridine)cobalt(III) tris(hexafluorophosphate)

CAS No. : 28277-53-4
 Grade : > 99% (NMR)
 Formula : C₃₀H₂₄CoF₁₈N₆P₃
 M.W. : 962.38 g/mol
 E⁰_{2+/3+} : 0.56 V vs NHE

Reference : *Chem. Mater.*, 2013, 25 (13), pp 2733-2739

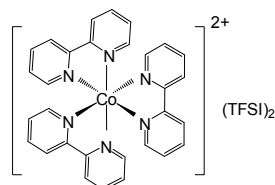


LT-S9185 | Co(II)(bpy)₃(TFSI)₂

Tris-(2,2'-bipyridine)cobalt(II) bis(trifluoromethanesulfonimide)

CAS No. : 1353745-90-0
 Grade : > 99% (NMR)
 Formula : C₃₄H₂₄CoF₁₂N₈O₈S₄
 M.W. : 1087.78 g/mol
 E⁰_{2+/3+} : 0.57 V vs NHE

Reference : *Chem. Mater.*, 2013, 25 (13), pp 2733-2739

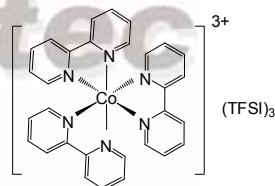


LT-S9186 | Co(III)(bpy)₃(TFSI)₃

Tris-(2,2'-bipyridine)cobalt(III) tris(trifluoromethanesulfonimide)

CAS No. : 1353745-91-1
 Grade : > 99% (NMR)
 Formula : C₃₆H₂₄CoF₁₈N₈O₁₂S₆
 M.W. : 1367.92 g/mol
 E⁰_{2+/3+} : 0.57 V vs NHE

Reference : *Chem. Mater.*, 2013, 25 (13), pp 2733-2739

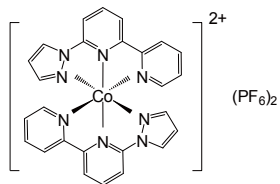


LT-S9187 | Co(II)(bpy-pz)₂(PF₆)₂

Bis(6-(1H-pyrazol-1-yl)-2,2'-bipyridine)cobalt(II) bis(hexafluorophosphate), mixture of stereoisomers

CAS No. : 312322-08-0
 Grade : > 99% (NMR)
 Formula : C₂₆H₂₀CoF₁₂N₈P₂
 M.W. : 793.35 g/mol
 E⁰_{2+/3+} : 0.86 V vs NHE

Reference : 1. *Phys. Chem. Chem. Phys.*, 2013, 15, 7087-7097
 2. *Nat. Commun.* 3:631



Dye-Sensitized Solar Cell (DSSC)

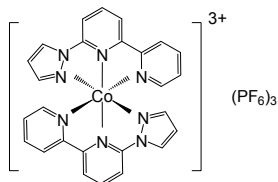
Redox Couple Electrolytes Materials

LT-S9188 | Co(III)(bpy-pz)₂(PF₆)₃

Bis(6-(1H-pyrazol-1-yl)-2,2'-bipyridine)cobalt(III) tris(hexafluorophosphate), mixture of stereoisomers

CAS No. : 1346417-60-4
Grade : > 99% (NMR)
Formula : C₂₆H₂₀CoF₁₈N₈P₃
M.W. : 938.32 g/mol
E⁰_{2+/3+} : 0.86 V vs NHE

Reference : 1. Phys. Chem. Chem. Phys., 2013, 15, 7087-7097
2. Nat. Commun. 3:631

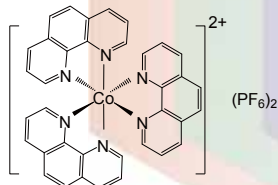


LT-S9191 | Co(II)(phen)₃(PF₆)₂

Tris(1,10-phenanthroline)cobalt(II) bis(hexafluorophosphate)

CAS No. : 31876-74-1
Grade : > 99% (NMR)
Formula : C₃₆H₂₄CoF₁₂N₆P₂
M.W. : 889.48 g/mol
E⁰_{2+/3+} : 0.61 V vs NHE

Reference : Phys. Chem. Chem. Phys., 2013, 15, 7087-7097

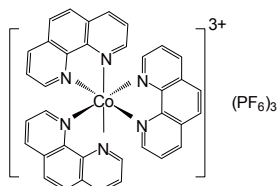


LT-S9192 | Co(III)(phen)₃(PF₆)₃

Tris(1,10-phenanthroline)cobalt(III) tris(hexafluorophosphate)

CAS No. : 28277-59-0
Grade : > 99% (NMR)
Formula : C₃₆H₂₄CoF₁₈N₆P₃
M.W. : 1034.44 g/mol
E⁰_{2+/3+} : 0.61 V vs NHE

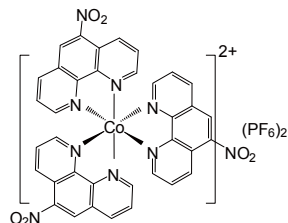
Reference : Phys. Chem. Chem. Phys., 2013, 15, 7087-7097



LT-S9193 | Co(II)(NO₂-phen)₃(PF₆)₂

Tris(5-nitro-1,10-phenanthroline)cobalt(II) bis(hexafluorophosphate)

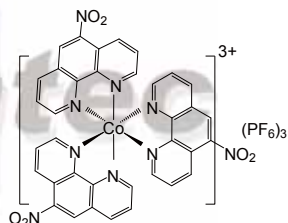
Grade : > 99% (NMR)
Formula : C₃₆H₂₁CoF₁₂N₉O₆P₂
M.W. : 1024.47 g/mol
E⁰_{2+/3+} : 0.85 V vs NHE



LT-S9194 | Co(III)(NO₂-phen)₃(PF₆)₃

Tris(5-nitro-1,10-phenanthroline)cobalt(III) tris(hexafluorophosphate)

Grade : > 99% (NMR)
Formula : C₃₆H₂₁CoF₁₈N₉O₆P₃
M.W. : 1169.43 g/mol
E⁰_{2+/3+} : 0.85 V vs NHE

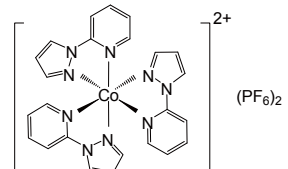


LT-S9195 | FK102 Co(II) PF₆ Salt

Tris(1-(pyridin-2-yl)-1H-pyrazol)cobalt(II) bis(hexafluorophosphate)

CAS No. : 1392221-69-0
Grade : > 99% (NMR)
Formula : C₂₄H₂₁CoF₁₂N₉P₂
M.W. : 784.35 g/mol
E⁰_{2+/3+} : 0.96 V vs NHE

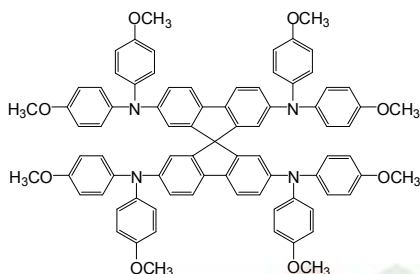
Reference : J.Mater. Chem. A, 2015,3, 12159-12162



LT-S922 | Spiro-MeOTAD

2,2',7,7'-Tetrakis(*N,N*-di-*p*-methoxyphenylamino)-9,9'-spirofluorene

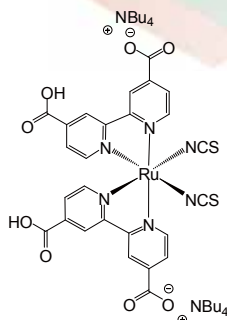
CAS No. : 207739-72-8
 Grade : > 99.5% (HPLC)
 Formula : $C_{81}H_{68}N_4O_8$
 M.W. : 1225.43 g/mole
 UV : 306, 385 nm (in CH_2Cl_2)
 PL : 429 nm (in CH_2Cl_2)
 TGA : > 360 °C (0.5% weight loss)
 Reference : 1.MRS. BULLETIN, 30, 2005, p23
 2.Appl. Phys. Lett. 100, 173512 (2012)



LT-S945 | N719

Di-tetrabutylammonium *cis*-bis(isothiocyanato)bis(2,2'-bipyridyl-4,4'-dicarboxylato)ruthenium(II)

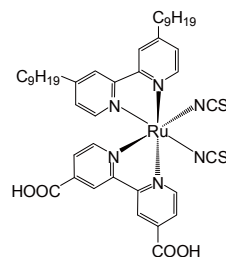
CAS No. : 207347-46-4
 Grade : > 98% (HPLC)
 Formula : $C_{58}H_{86}N_8O_8RuS_2$
 M.W. : 1188.55 g/mole
 UV : 313, 534 nm (in EtOH)
 Reference : Inorg. Chem. 1999, 38, 6298-6305



LT-S964 | Z-907

cis-Bis(isothiocyanato)(2,2'-bipyridyl-4,4'-dicarboxylato)(4,4'-di-nonyl-2'-bipyridyl)ruthenium(II)

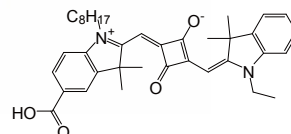
CAS No. : 502693-09-6
 Grade : > 98% (HPLC)
 Formula : $C_{42}H_{52}N_6O_4RuS_2$
 M.W. : 870.10 g/mole
 UV : 295, 531 nm (in EtOH)
 Reference : Nature Materials 2, 402-407 (2003)



LT-S9037 | SQ01

(*E*)-4-((5-carboxy-3,3-dimethyl-1-octyl-3*H*-indolium-2-yl)methylene)-2-((*E*)-(1-ethyl-3,3-dimethylindolin-2-ylidene)methyl)-3-oxocyclobut-1-enolate

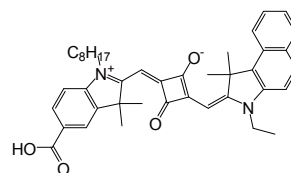
CAS No. : 951248-19-4
 Grade : > 99% (HPLC)
 Formula : $C_{37}H_{44}N_2O_4$
 M.W. : 580.67 g/mole
 UV : 637 nm (in DMF)
 TGA : > 220 °C (0.5% weight loss)
 Reference : Adv. Funct. Mater. 2009, 19, 2720-2727



LT-S9038 | SQ02

(*E*)-4-((5-carboxy-3,3-dimethyl-1-octyl-3*H*-indolium-2-yl)methylene)-2-((*E*)-(3-ethyl-1,1-dimethyl-1*H*-benzo[*e*]indol-2(3*H*)-ylidene)methyl)-3-oxocyclobut-1-enolate

CAS No. : 1240041-84-2
 Grade : > 99% (HPLC)
 Formula : $C_{41}H_{46}N_2O_4$
 M.W. : 630.81 g/mole
 UV : 662 nm (in DMF)
 TGA : > 250 °C (0.5% weight loss)
 Reference : Adv. Funct. Mater. 2009, 19, 2720-2727

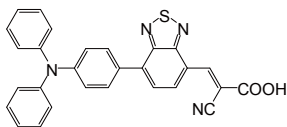


LT-S9068 | RL-1

2-Cyano-3-(7-(4-(diphenylamino)phenyl)-benzo[c][1,2,5]thiadiazol-4-yl)acrylic acid

CAS No. : 1415134-59-6
 Grade : > 99% (NMR)
 Formula : C₂₈H₁₈N₄O₂S
 UV : 324, 486 nm (in THF)
 TGA : > 240 °C (0.5% weight loss)

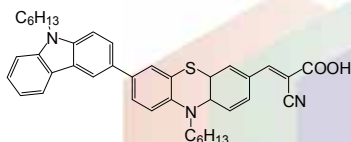
Reference : Chem. Commun. 2012, 48, 12071-12073



LT-S9120 | PTCbCA

(E)-2-cyano-3-(10-hexyl-7-(9-hexyl-9H-carbazol-3-yl)-10,10a-dihydro-4aH-phenothiazin-3-yl)acrylic acid

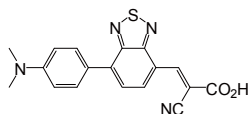
Grade : > 99% (NMR)
 Formula : C₄₀H₄₃N₃O₂S
 M.W. : 629.85 g/mole



LT-S9121 | CDMA-PBTCA

2-Cyano-3-(7-(4-(dimethylamino)phenyl)-benzo[c][1,2,5]thiadiazol-4-yl)acrylic acid

Grade : > 99% (NMR)
 Formula : C₁₈H₁₈N₄O₂S
 M.W. : 350.39 g/mole

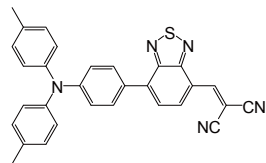


LT-S9122 | DTDCPB

2-((7-(4-(dip-tolylamino)phenyl)benzo[c][1,2,5]thiadiazol-4-yl)methylene)malononitrile

CAS No. : 1393343-58-2
 Grade : > 99% (NMR)
 Formula : C₃₀H₂₁N₅S
 M.W. : 483.59 g/mole
 UV : 306, 568 nm (in CH₂Cl₂)

Reference : ACS Nano, 2014, 8 (2), pp 1674-1680

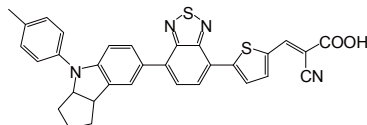


LT-S9166 | WS-2

(E)-2-cyano-3-(5-(7-(4-(p-tolyl)-1,2,3,3a,4,8b-hexahydrocyclopenta[b]indol-7-yl)benzo[c][1,2,5]thiadiazol-4-yl)thiophen-2-yl)acrylic acid

CAS No. : 1263863-11-1
 Grade : > 99% (HPLC)
 Formula : C₃₂H₂₄N₄O₂S₂
 M.W. : 560.6900 g/mole
 UV : 546 nm (in CH₂Cl₂)

Reference : 1.MRS. BULLETIN, 30, 2005, p23
 2.Appl. Phys. Lett. 100, 173512 (2012)

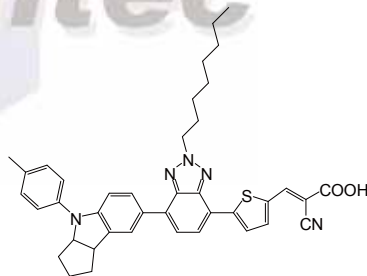


LT-S9167 | WS-5

(E)-2-cyano-3-(5-(2-octyl-7-(4-(p-tolyl)-1,2,3,3a,4,8b-hexahydrocyclopenta[b]indol-7-yl)-2H-benzo[d][1,2,3]triazol-4-yl)thiophen-2-yl)acrylic acid

CAS No. : 1334739-85-3
 Grade : > 99% (HPLC)
 Formula : C₄₀H₄₁N₅O₂S
 M.W. : 655.8610 g/mole
 UV : 496 nm (in CH₂Cl₂)

Reference : Chem. Mater. 2011, 23, 4394; ACS Appl. Mater. Interfaces 2014, 6, 14621

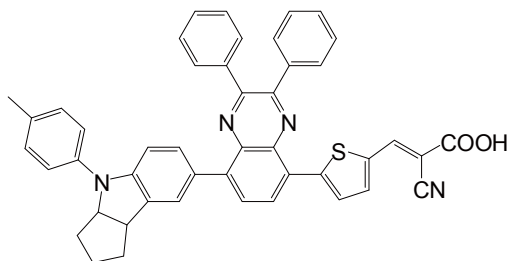


LT-S9168 | IQ-4

(E)-2-cyano-3-(5-(2,3-diphenyl-8-(4-(p-tolyl)-1,2,3,3a,4,8b-hexahydrocyclopenta[b]indol-7-yl)quinoxalin-5-yl)thiophen-2-yl)acrylic acid

CAS No. : 1440205-23-1
 Grade : > 99% (HPLC)
 Formula : $C_{46}H_{34}N_4O_2S$
 M.W. : 706.8640 g/mole
 UV : 529 nm (in CH_2Cl_2)

Reference : *ACS Appl. Mater. Interfaces* 2013, 5, 4986; *J. Am. Chem. Soc.* 2014, 136, 5722.

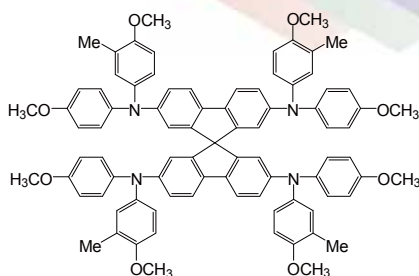


LT-S9170 | Spiro-MeOTAD-HTM1

2,2',7,7'-Tetrakis(4,4'-dimethoxy-3-methyldiphenylamino)-9,9'-spirobifluorene

CAS No. : 1573202-31-9
 Grade : > 99% (HPLC)
 Formula : $C_{85}H_{76}N_4O_8$
 M.W. : 1281.53 g/mole
 UV : 306, 385 nm (in CH_2Cl_2)
 PL : 429 nm (in CH_2Cl_2)

Reference : *ACS Appl. Mater. Interfaces* 2015, 7, 11107-11116



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