

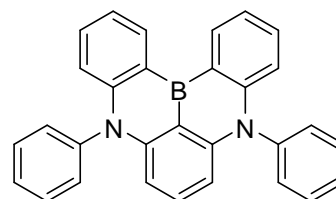


## Ultrapure Blue TADF Molecules: Efficient HOMO-LUMO Separation by the Multiple Resonance Effect

### Product Specifications

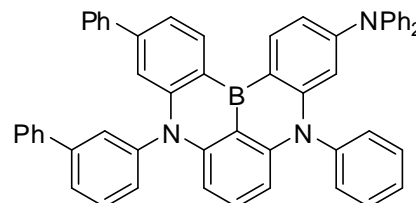
#### LT-N6009 DABNA-1

Name.	5,9-Diphenyl-5H,9H-[1,4]benzazaborino[2,3,4-kl]phenazaborine
CAS No.	1689552-89-3
Grade	Sublimed, >99 % (HPLC)
Formula	C <sub>30</sub> H <sub>21</sub> BN <sub>2</sub>
Molecular Weight	420.31 g/mole
Absorption	437 nm (in CH <sub>2</sub> Cl <sub>2</sub> )
Emission	462 nm (in CH <sub>2</sub> Cl <sub>2</sub> )
HOMO/LUMO	-5.58 eV/ -2.91 eV
$\Delta E_{ST}$	0.2 eV



#### LT-N6002 DABNA-2

Name.	9-[1,1'-Biphenyl]-3-yl-N,N,5,11-tetraphenyl-5H,9H-[1,4]benzazaborino[2,3,4-kl]phenazaborin-3-amine
CAS No.	1689553-04-5
Grade	Sublimed, >99 % (HPLC)
Formula	C <sub>54</sub> H <sub>38</sub> BN <sub>3</sub>
Molecular Weight	739.71 g/mole
Absorption	444 nm (in CH <sub>2</sub> Cl <sub>2</sub> )
Emission	470 nm (in CH <sub>2</sub> Cl <sub>2</sub> )
HOMO/LUMO	-5.38 eV/ -2.75 eV
$\Delta E_{ST}$	0.2 eV



\* Reference: *Adv. Mater.* **2016**,

### Features

- The ultrapure blue emitters having small  $\Delta E_{ST}$ , high  $\Phi$ , and excellent color purity. The device employing emitter DABNA-2 exhibited pure blue emission at 467 nm with a narrow FWHM of 28 nm, and an IQE of almost 100%, which represent record-setting performance for blue OLEDs.

Materials are used by qualified for testing and research only, there are not guaranteed in patent contention by customer use.

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## Device Application

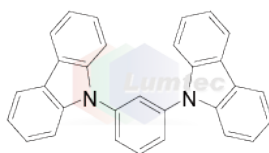
### The Blue Device:

ITO/ NPD (40 nm)/ TcTa (15 nm)/ MCP (15 nm)/ DABNA-1: m-CBP (1 wt%, 20 nm)/ TSPO1 (40 nm)/ LiF (0.5 nm)/ Al (150 nm).

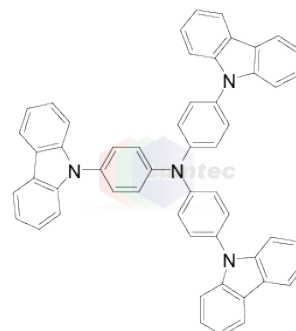
ITO/ NPD (40 nm)/ TcTa (15 nm)/ MCP (15 nm)/ DABNA-2: m-CBP (1 wt%, 20 nm)/ TSPO1 (40 nm)/ LiF (0.5 nm)/ Al (150 nm).



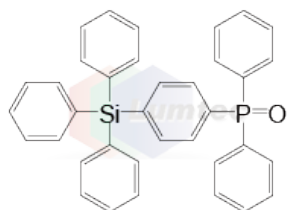
LT-E115  $\alpha$ -NPD



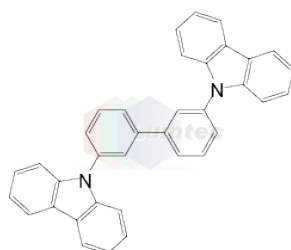
LT-E107 MCP



LT-E207 TcTa



LT-N4048 TSPO1



LT-N4069 m-CBP

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