**About us**

**Luminescence Technology Corp. (Lumtec)** is an acknowledged world manufacturer in organic chemicals. Over ten years of abundant experiences developing innovative organic optoelectronic materials in the markets of OLED, OPV, OTFT have led Luminescence Technology to become renowned company in the chemical synthesis industry in North America, Europe, Asia and Taiwan. The company is now present in 7 locations worldwide to support its customers' demanding applications.

Lumtec product-range includes OLED, OPV, OTFT, Organic Intermediates, Boronic Acid, ITO Patterned Glass and components, developed and manufactured in Hsin-Chu, Taiwan. These innovative materials reputed for their unique expertise carry the Lumtec brand-name as a guarantee of high performances and cost-effectiveness. Most of our products are kept in stock of semi-bulk quantities to offer customers the service of just-in-time delivery.

Continuously, Luminescence Technology Corp. keeps developing more advanced and innovative organic optoelectronic materials to support customers always the up-to-date products. We specifically offer custom synthesis and OEM/ODM products. Lumtec R&D team are professional experts to make related materials on demand of intermediates, reference compounds, starting materials, as well as derivatives of lead compounds, which are designed for ordering in scale range from grams to kilo-grams.

Luminescence Technology Corp. has put in place the manufacturing and service facilities required to offer high quality levels to customers. All products are inspected by modern analytical methods to meet the highest quality standards. With approach to the certifications of ISO 9001 and ISO 14001, Lumtec is aiming at the highest quality and environmental standards in service and support.
Following Patents and Publications for Reference:

**Patents**
- US7,282,586: Dicylindine-based compound and the use thereof
- US7,754,348: Phenanthroline compound and organic light emitting device using the same
- US20110163300: Organic Light-emitting material, Organic Light-emitting element using the same and method of forming the same
- US20140131664: Indenotriphenylene derivatives and organic light emitting device using the same
- US20140151645: Fluorene compound and organic electroluminescent device using the same
- US20140166988: Organic compound and organic electroluminescent device using the same
- US20140175384: Material for organic electroluminescent device
- US20140209866: Organic compound for organic electroluminescent device
- US20140231754: Ditriphenylene derivative and organic electroluminescent device using the same
- TW I402243: 有機發光材料
- TW 102136158: VEGF-2/3受體及蛋白質酪胺酸激酶抑制劑及其醫藥用途
- CN101372455A: 芳基胺化合物及应用该化合物之有机发光组件
- CN103508835: 萃取苯并菲衍生物及使用其的有机电致发光器件

**Publications**
- The improvement of efficiency and lifetime for organic light-emitting devices by using a high Tg and heat-resistant hole injection material. *Asia Display 2007 Conference*
- Stable White OLED device using mixed dopant and simple process. *The 1st International Conference on Display LEDs*
- Efficient Deep Blue, Blue, Green, Yellow, Reddish- Orange and Red Organic Light-Emitting Device using 2,7-Dipyrenespirofluorene(DPSF) as a Fluorescent Emitting Host. *SID Symposium Digest of Technical Papers, 2007, V38, p883-887*
- All-solution-processed blue small molecular organic light-emitting diodes with multilayer device structure.
  2. Organic Electronics, 2009, V10, p1610-1614
- Molecular-weight-dependent nanoscale morphology in silole-containing cyclopentadithiophene polymer and fullerene derivative blends. *Organic Electronics, 2011, V12, p1755-1762*
New Materials Development
Lumtec has the specialized R&D team for new materials development and production. We are fully devoted to the manufacturing of the organic optoelectronic materials, advancement of various compounds, fine purification and qualified analysis techniques.

Lumtec is proud of our progressive technologies to provide extensive products for customers, and we continuously keep developing new patent materials for the future innovative applications.

Reaction Equipment
Lumtec is able to scale-up the large amounts of chemicals listed in our catalog and products of custom synthesis. Any inquiries of mass production will be very welcome.

- 50L to 500L / Glass-Lined, Stainless Steel
- Capacity : 500 kg/month

Sublimation Equipment
Lumtec specializes in repurifying materials adopting proficient sublimation skills and techniques to reach the highest level of quality. We set up the in-house sublimation equipments which are applicable for particular products and bulk quantities. We are pleased to provide all materials that are ready for use in vacuum deposition process.

- 2 inches to 10 inches quartz tubes
- Capacity : 100 kg/month

Lithographically Patterned ITO Equipment
Lumtec can supply the ITO glass cutting, cleaning and patterning service to customer requirements. The specialized pattern masking process is used, and that allows us to offer quantities ranging from small scale prototyping of research requirements to full scale production volumes.

- Maximum patterning area 150 x 150 mm
- Minimum feature dimension 0.02 mm
- Minimum spacing 0.15 mm
- Positioning accuracy 0.1 mm
- Clean room : Class 100
- Resolution : L/S < 10 μm

Vacuum Deposition Equipment
OLED has been widely recognized as the technology for potential future use. Lumtec has set up a state-of-the-art vacuum deposition equipment, including clean room and organic evaporator equipment for testing, training and pilot-run towards OLED technology. We currently started to offer pilot-run services for companies which intend to optimize materials, performance of device and process parameter, etc. It should be very considerable using our facility on a trial basis before customers invest their own costly facility.

- Maximum active area : 100 mm × 100 mm
- 8 Heaters, simultaneously optimizing 4 individual parameters
- Clean room : Class 100
- Automatic cover encapsulation
About us

OLED Device Evaluation Equipment

Key parameter of OLED device could be determined precisely by our own dynamic device evaluation equipment, such as applied voltage, luminescence, current density, power efficiency and CIE value. In particular, we had designed an exclusive installation to record variations in lifetime.

- PR-650 & Keithley 2400 SourceMeter
- Life-time test equipment

Quality Assurance & Control

Lumtec is committed to be the preferred global manufacturer for organic optoelectronic materials and fine chemicals. Three most essential properties of our products are quality, efficiency and diversity. To meet customer requirements and satisfaction, the certified report generated by PL, UV, HPLC, GPC and TGA as well as structure identified instrument will be applicable for Lumtec materials in order to always supply high quality products to our customers. With close connection between each department from raw materials to final production, we continuously strive improving and developing reliable techniques to fulfill customer satisfaction in the years ahead.

Custom Synthesis and OEM/ODM Materials

Any inquiry of customs synthesis for a sample trial order or mass production will be taken into a complete and thorough review and evaluation. Our commitment of competitive cost, efficient lead time, professional design and highest quality will always meet customers' satisfaction and standards.

Organic Light Emitting Diode (OLED)

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- Hole Injection Layer(HIL) Materials (25) ---------------------------------- 57
- Phosphorescent Host Materials (74) --------------------------------------- 62
- Fluorescent Host Materials (32) ------------------------------------------ 75
- Green Dopant Materials (16) --------------------------------------------- 81
- Blue Dopant Materials (43) ----------------------------------------------- 84
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- Electron Transport Layer / Hole Blocking Layer(ETL/HBL) Materials (43) -- 98
- Electron Injection Layer(EIL) Materials / Metal (5) --------------------- 106
Organic Light Emitting Diode (OLED)

Introduction

Organic light emitting diode (OLED) is a light-emitting diode (LED) whose emissive electroluminescent layer is composed of a film of organic compounds.

The first diode device was reported at Eastman Kodak by Dr. Ching W Tang and Steven Van Slyke in 1987. This device used a novel two-layer structure with separate hole transporting and electron transporting layers such that recombination and light emission occurred in the middle of the organic layer. This resulted in a reduction in operating voltage and improvements in efficiency and led to the current area of OLED research and device production.

There are two main families of OLED: those based on small molecules and those employing polymers. Research into polymer electroluminescence culminated in 1990 with J. H. Burroughes et al. at the Cavendish Laboratory in Cambridge reporting a high efficiency green light-emitting polymer based device using 100 nm thick films of poly(p-phenylene vinylene). However multilayer OLEDs can be fabricated with two or more layers in order to improve device efficiency.

Another highly efficient white OLED device is to produce laminated structure. Kido believes that contains a structural unit N brightness white OLED can achieve a single OLED, N times, thus substantially increase the efficiency of the device.

OLED systems can be used in television screens, computer monitors, small portable system screens such as cell phones and PDAs, advertising, information and indication. OLEDs can also be used in light sources for general space illumination, and large area light-emitting elements.

Advantages of OLED:

1. Much faster response time.
2. Consume significantly less energy.
3. Able to display “True Black” picture.
5. Thinner display.
7. Safer for the environment.
8. Has potential to be mass produced inexpensively.

Recently, researchers from Kyushu University that led by Chihaya Adachi developed one kind of new OLED light-emitting fluorescent materials with 100% internal quantum efficiency. They have established light emission principle called thermally activated delayed fluorescence (TDAF) and worked on designing a material to increase its luminous efficiency. TADF OLEDs are free from the heavy metals used in phosphorescent emitters and so they could be cheaper and better for the environment. It can expect that will be great development in the future.

Organic Light Emitting Diode (OLED)

Index - Hole Transport Layer / Electron Blocking Layer (HTL/EBL) Materials

| LT-E101 | 123847-85-8 |
| LT-E102 | 139255-17-7 |
| LT-E103 | 65181-78-4 |
| LT-E105 | 1033035-83-4 |
| LT-E106 | 932739-76-9 |
| LT-E109 | 677350-83-3 |
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| LT-E111 | 206886-03-5 |
| LT-E112 | 357645-40-0 |
| LT-E115 | 495416-60-9 |
| LT-E116 | 189363-47-1 |
| LT-N124 | 510775-24-3 |
| LT-N125 | 404001-42-9 |
| LT-N131 | 934000-87-0 |
| LT-N135 | 1174006-39-3 |
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| LT-N139 | 141752-82-1 |
| LT-N140 | 105465-14-3 |
| LT-N141 | 374592-88-8 |
| LT-N142 | 186256-01-9 |
| LT-N143 | 139994-47-1 |

Our products are used for testing and research purpose; they are not guaranteed in patent contention by customer use.
### Organic Light Emitting Diode (OLED)

**Index - Fluorescent Host Materials**

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Head office: 2F, No. 17, R&D Road II, Science-Based Industrial Park, Hsin-Chu 30076, Taiwan, R.O.C., Tel: +886-3-666-3188, Fax: +886-3-666-9288
Email: sales@lumtec.com.tw, Web: http://www.lumtec.com.tw
### Organic Light Emitting Diode (OLED)

**Index - Blue Dopant Materials**

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![Diagram of Organic Light Emitting Diodes](image-url)

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Email: sales@lumtec.com.tw, Web: http://www.lumtec.com.tw
Organic Light Emitting Diode (OLED)

Index - Blue Dopant Materials

LT-N646  870009-65-7  LT-N654  1333342-54-3
LT-N653  1333342-53-2

LT-N655  1333342-55-4  LT-N656  1333342-56-5  LT-N657  1333342-57-6

LT-N658  888725-36-8  LT-N659  1353762-13-6  LT-N660  1353762-14-7

LT-N662  1261580-75-9  LT-N664  665005-28-7
LT-N663  1258522-36-9

LT-N669  1421058-47-0  LT-S9058  850594-34-2  LT-N675  1498411-20-3
LT-N678  1505456-00-7  LT-N679  1417790-60-3  LT-N680  1262281-91-3
LT-N832  850018-19-8
Organic Light Emitting Diode (OLED)

Index - Red Dopant Materials

| LT-E701 | 51325-91-8 |
| LT-E702 | 51325-95-2 |
| LT-E703 | 159788-00-8 |
| LT-E704 | 200052-70-6 |
| LT-E706 | 17904-83-5 |
| LT-E707 | 517-51-1 |
| LT-E709 | 343978-79-0 |
| LT-N721 | 1617506-77-0 |
| LT-N724 | 889750-25-8 |
| LT-N740 | 1404197-18-7 |
| LT-N741 | 1268460-37-2 |
| LT-N742 | 1433853-90-7 |
| LT-N743 | 725251-24-1 |
| LT-N744 | 100367-98-4 |
| LT-N745 | 953079-91-9 |
| LT-N746 | 713079-03-9 |
| LT-N747 | 1202867-58-0 |
| LT-N748 | 1404197-18-7 |
| LT-N749 | 1268460-37-2 |
| LT-N750 | 1433853-90-7 |
| LT-N751 | 435294-13-6 |
| LT-N752 | 31248-39-2 |
| LT-N753 | 536755-34-7 |

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Organic Light Emitting Diode (OLED)

Index - Red Dopant Materials

LT-N754  1240249-29-9  LT-N757  

LT-N755  1621179-34-7  LT-N767  1542693-87-7  LT-N768  1228537-77-6

Organic Light Emitting Diode (OLED)

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LT-E304  4733-39-5  LT-E305  1662-01-7  LT-E407  146162-54-1


LT-N837  16152-10-6  LT-N843  1174006-43-9  LT-N851  1174006-45-1
Organic Light Emitting Diode (OLED)

Index - Electron Transport Layer / Hole Blocking Layer (ETL/HBL) Materials

| LT-N855 | 138372-67-5 |
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| LT-N863 | 921205-03-0 |
| LT-N864 | 266349-83-1 |
| LT-N865 | 1030380-38-1 |
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| LT-N870 | 1246467-58-2 |

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| LT-N886 | 1456569-77-9 |
| LT-N887 | 1049805-81-3 |
| LT-N888 | 1097652-83-9 |
| LT-N889 | 1492917-78-8 |
### Index - Electron Transport Layer / Hole Blocking Layer (ETL/HBL) Materials

| LT-N890 | 1382639-67-9 |
| LT-N891 | 1382639-70-4 |
| LT-N892 | 1311378-95-6 |
| LT-N894 | 1397176-03-6 |
| LT-N8001 | 1447848-17-0 |
| LT-N8002 | 1447848-17-0 |
| LT-N8003 | 1197176-03-6 |

### Index - Electron Injection Layer (EIL) Materials / Metal

| LT-E001 | 7789-24-4 |
| LT-E002 | 534-17-8 |
| LT-E003 | 1313-27-5 |
| LT-E004 | 13400-13-0 |
| LT-E005 | 7429-90-5 |

*Organic Light Emitting Diode (OLED)*
**Organic Light Emitting Diode (OLED)**

**Hole Transport Layer / Electron Blocking Layer (HTL/EBL) Materials**

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**Hole Transport Layer / Electron Blocking Layer (HTL/EBL) Materials**

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### Organic Light Emitting Diode (OLED)

#### Hole Transport Layer / Electron Blocking Layer (HTL/EBL) Materials

#### LT-N124 | NPAPF
9,9-Bis(4-[N'-naphthalen-1-yl-N'-phenyl]amino)phenyl-9H-fluorene

- CAS No.: 510775-24-3
- Grade: 99% (HPLC)
- M.W.: 752.94 g/mole
- UV: 304 nm (in THF)
- PL: 431 nm (in THF)
- TGA: > 320 °C (0.5% weight loss)

#### LT-N135 | 2,2''Spiro-DBP
2,2''-Bi-[N'-bis(4-fluorene)-N'-phenol] fluorene

- CAS No.: 1174006-39-3
- Grade: 99% (HPLC)
- M.W.: 955.19 g/mole
- UV: 349 nm (in THF)
- PL: 413 nm (in THF)
- TGA: > 310 °C (0.5% weight loss)

#### LT-N125 | Spiro-2NPB
2,2',7,7'-Tetrakis[N,N-di-p-tolyl-amino]-9,9-spirobifluorene

- CAS No.: 404001-42-9
- Grade: 99% (HPLC)
- M.W.: 850.83 g/mole
- UV: 348 nm (in THF)
- PL: 398 nm (in THF)
- TGA: > 320 °C (0.5% weight loss)

#### LT-N136 | Spiro-BPA
2,2'-(N,N-di(4-fluorene)-9,9-spirobifluorene

- CAS No.: 862664-73-1
- Grade: 99% (HPLC)
- M.W.: 650.83 g/mole
- UV: 348 nm (in THF)
- PL: 398 nm (in THF)
- TGA: > 310 °C (0.5% weight loss)

#### LT-N131 | PAPB
N, N', N'', N'''-Tetra-(3-methylphenyl)-3,3''-dimethylbenzidine

- CAS No.: 934000-87-0
- Grade: 99% (HPLC)
- M.W.: 688.86 g/mole
- UV: 354 nm (in THF)
- PL: 429 nm (in THF)
- TGA: > 310 °C (0.5% weight loss)

#### LT-N137 | TAPC
Di-[4-(N,N-di-p-tolyl-)aminophenyl]hexane

- CAS No.: 58473-78-2
- Grade: 99.5% (HPLC)
- M.W.: 626.87 g/mole
- UV: 305 nm (in THF)
- PL: 414 nm (in THF)
- TGA: > 290 °C (0.5% weight loss)


Reference: Journal of Applied Physics, Vol. 95, No.12, 7796-7801.

#### LT-N138 | Spiro-TTB
2,2''-Bi-[N'-bis(4-fluorene)-N'-phenol] fluorene

- CAS No.: 1174006-39-3
- Grade: 99% (HPLC)
- M.W.: 512.78 g/mole
- UV: 302 nm (in THF)
- PL: 399 nm (in THF)
- TGA: > 290 °C (0.5% weight loss)


Organic Light Emitting Diode (OLED)  
Hole Transport Layer / Electron Blocking Layer (HTL/EBL) Materials

LT-N144  | TTP  
N’N’-Diphenyl-N,N’-dimethylbenzene-1,4-diamine  
CAS No. : 80023-29-6  
Grade : SUBLIMED, > 99% (HPLC)  
Formula : C_{19}H_{18}N_{2}  
M.W. : 258.36 g/mole  
Solubility : Soluble in CHCl_{3}, Toluene  
TGA : > 230 °C (0.5% weight loss)  
Reference : Adv. Mater. 2006, 18, 948-954

LT-N145  | NDDP  
N,N,N’-Tetraphenylnaphthalene-2,6-diamine  
CAS No. : 111961-87-6  
Grade : SUBLIMED, > 99% (HPLC)  
Formula : C_{32}H_{26}N_{2}  
M.W. : 462.58 g/mole  
Solubility : Soluble in CHCl_{3}, Toluene  
TGA : > 210 °C (0.5% weight loss)  

LT-N146  | TQTP  
Tri-4-quinodimethane-8-phenylamine  
CAS No. : 1142945-07-0  
Grade : SUBLIMED, > 99% (HPLC)  
Formula : C_{32}H_{26}N_{2}  
M.W. : 462.58 g/mole  
Solubility : Soluble in CHCl_{3}, Toluene  
TGA : > 230 °C (0.5% weight loss)  

LT-N147  | 3DTAPBP  
2,2’-Bis-(N,N’-di-p-tolylphenylamino)benzophenone  
CAS No. : 860357-89-1  
Grade : SUBLIMED, > 99% (HPLC)  
Formula : C_{38}H_{30}N_{2}  
M.W. : 696.92 g/mole  
Solubility : Soluble in CHCl_{3}, Toluene  
TGA : > 280 °C (0.5% weight loss)  

LT-N148  | TFP  
Poly[9,9-diocoyfluorenyl-2,7-diyl-co-(4,4’-(N-(4-sec-butylphenyl)phenylamino)benzophenone)]  
CAS No. : 220797-16-0  
Grade : > 95% (HPLC)  
Formula : C_{38}H_{30}N_{2}  
M.W. : 631.92 g/mole  
Solubility : Soluble in CHCl_{3}, Toluene  
TGA : > 270 °C (0.5% weight loss)  

LT-N149  | Poly-TPD  
Poly(NV’-bis(4-butyloctyl)-N,N’-bis(phenyl)benzidine)  
CAS No. : 472260-35-3  
Grade : > 95% (HPLC)  
Formula : C_{50}H_{46}N_{2}  
M.W. : 710.68 g/mole  
Solubility : Soluble in CHCl_{3}, Toluene  
TGA : > 280 °C (0.5% weight loss)  

LT-N152  | TPD10  
N,N,N’-Trimethylfluorenyl-2,7-diyl-bis-N,N,N’-diphenylbenzidine  
CAS No. : 134008-76-7  
Grade : SUBLIMED, > 99% (HPLC)  
Formula : C_{38}H_{30}N_{2}  
M.W. : 631.92 g/mole  
Solubility : Soluble in CHCl_{3}, Toluene  
TGA : > 270 °C (0.5% weight loss)  

LT-N158  | ONPB  
N,N,N’-N,N’-Di(naphthalen-1-yl)-N,N’-di-(4-octylphenyl)benzidine  
CAS No. : 1431521-16-2  
Grade : > 95% (HPLC)  
Formula : C_{52}H_{48}N_{2}  
M.W. : 793.89 g/mole  
Solubility : Soluble in CHCl_{3}, Toluene  
TGA : > 300 °C (0.5% weight loss)  

LT-N159  | OTPD  
N,N,N’-Tris(3-methylphenyl)-N,N’-bis(4-vinylphenyl)benzidine  
CAS No. : 74663-04-9  
Grade : > 99% (HPLC)  
Formula : C_{48}H_{36}N_{2}  
M.W. : 645.81 g/mole  
Solubility : Soluble in CHCl_{3}, Toluene  
TGA : > 250 °C (0.5% weight loss)  

LT-N157  | VNPB  
N,N,N’-N,N’-Di(naphthalen-1-yl)-N,N’-di-(4-octylphenyl)benzidine  
CAS No. : 101096-31-2  
Grade : > 95% (HPLC)  
Formula : C_{48}H_{36}N_{2}  
M.W. : 645.81 g/mole  
Solubility : Soluble in CHCl_{3}, Toluene  
TGA : > 250 °C (0.5% weight loss)  

LT-N155  | DOFL-TPD  
N,N,N’-Bis(9,9-diocoyfluorenyl)-N,N’-bis(phenyl)benzidine  
CAS No. : 439842-97-9  
Grade : > 99% (HPLC)  
Formula : C_{52}H_{48}N_{2}  
M.W. : 793.89 g/mole  
Solubility : Soluble in CHCl_{3}, Toluene  
TGA : > 250 °C (0.5% weight loss)  

LT-N154  | DOFL-NPB  
N,N,N’-N,N’-Di(naphthalen-1-yl)-N,N’-di-(4-sec-butylphenyl)benzidine  
CAS No. : 870397-09-4  
Grade : > 99% (HPLC)  
Formula : C_{52}H_{48}N_{2}  
M.W. : 793.89 g/mole  
Solubility : Soluble in CHCl_{3}, Toluene  
TGA : > 300 °C (0.5% weight loss)  

LT-N156  | VNPB  
N,N,N’-Di(naphthalen-1-yl)-N,N’-di-(4-octylphenyl)benzidine  
CAS No. : 101096-31-2  
Grade : > 95% (HPLC)  
Formula : C_{48}H_{36}N_{2}  
M.W. : 645.81 g/mole  
Solubility : Soluble in CHCl_{3}, Toluene  
TGA : > 250 °C (0.5% weight loss)  

Organic Light Emitting Diode (OLED)

Hole Transport Layer / Electron Blocking Layer (HTL/EBL) Materials

LT-N160 | QUPD
---|---
\( \text{N,N',N''-Bis(9,9'-dimethyl-9H-fluoren-2-yl)-N,N',N''-diphenyl-9,9'-disubstituted carbazole} \)

CAS No.: 864130-79-0
Grade: > 99% (HPLC)
Formula: \( \text{C}_{94} \text{H}_{94} \text{N}_2 \text{O}_2 \)
M.W.: 1582.0 g/mole
UV: 415 nm (in CH2Cl2)
PL: 515 nm (in CH2Cl2)
TGA: > 270 °C (0.5% weight loss)


LT-N164 | VB-FNPD
---|---
\( \text{N,N'-Diphenyl-1-yl,N,N'-diphenyl-9,9'-disubstituted carbazole} \)

CAS No.: 1173170-48-3
Grade: > 95% (HPLC)
Formula: \( \text{C}_{94} \text{H}_{94} \text{N}_2 \text{O}_2 \)
M.W.: 1582.0 g/mole
UV: 415 nm (in CH2Cl2)
PL: 515 nm (in CH2Cl2)
TGA: > 270 °C (0.5% weight loss)


LT-N165 | X-F6-TAPC
---|---
\( \text{N,N'-} \text{4,4'-(Cyclohexane-1,1-diyl)} \text{-bis(4,1-phenylene)} \text{-bis(9,9'-diphenyl-9,9'-disubstituted carbazole)} \)

CAS No.: 1409723-96-8
Grade: > 99% (HPLC)
Formula: \( \text{C}_{94} \text{H}_{94} \text{N}_2 \text{O}_2 \)
M.W.: 1582.0 g/mole
UV: 415 nm (in CH2Cl2)
PL: 515 nm (in CH2Cl2)
TGA: > 270 °C (0.5% weight loss)


LT-N1002 | BF-DPB
---|---
\( \text{N,N'-Bis(9,9'-disubstituted carbazole-2-yl)-N,N'-diphenylbiphenyl-4,4'-diamine} \)

CAS No.: 361486-60-4
Grade: > 99% (HPLC)
Formula: \( \text{C}_{94} \text{H}_{94} \text{N}_2 \text{O}_2 \)
M.W.: 1582.0 g/mole
UV: 415 nm (in CH2Cl2)
PL: 515 nm (in CH2Cl2)
TGA: > 270 °C (0.5% weight loss)

Organic Light Emitting Diode (OLED)  
Hole Transport Layer / Electron Blocking Layer (HTL/EBL) Materials

**LT-N179**  
**TFA**  
Tris(9,9-dimethylfluoren-2-ylamine)  
CAS No.: 1303951-71-4  
Grade: > 99% (HPLC)  
Formula: C_{36}H_{27}N  
M.W.: 593.8 g/mole  
TGA: > 150 °C (0.5% weight loss)  

**LT-N180**  
**Spiro-mTTB**  
2,2',7,7'-Tetrakis(N,N-dimethyl-9H-fluoren-2-yl)amine  
CAS No.: 302344-41-8  
Grade: > 99% (HPLC)  
Formula: C_{27}H_{22}N  
M.W.: 397.43 g/mole  
UV: 378 nm (in THF)  
PL: 392 nm (in film)  
TGA: > 220 °C (0.5% weight loss)  
2. Synthetic Metals, 167, 1-4

**LT-N181**  
**PFNIBT**  
Poly(9,9-bis(3-tert-butylphenyl)fluorene-2,5-diyl-alt-[3,3',4,4'-biphenyl-4,4'-diyl])  
CAS No.: 205327-13-5  
Grade: > 99% (HPLC)  
Formula: C_{205}H_{177}N  
M.W.: 276.15 g/mole  
TGA: > 180 °C (0.5% weight loss)  
Reference: Synthetic Metals, 167, 1-4

**LT-E201**  
**CuPC**  
Copper(II) phthalocyanine  
CAS No.: 21651-93-1  
Grade: Sublimed, > 99% (HPLC)  
Formula: C_{55}H_{42}CuN_{10}O_{4}  
M.W.: 1303.95 g/mole  
UV: 392 nm (in THF)  
PL: 402 nm (in THF)  
TGA: > 270 °C (0.5% weight loss)  
Reference: Synthetic Metals, 148, 205-211

**LT-N182**  
**TSBPA**  
4,4'-Di(9,9-dimethylfluoren-2-yl-N,N-diphenylamidine)  
CAS No.: 205327-13-5  
Grade: > 99% (HPLC)  
Formula: C_{205}H_{177}N  
M.W.: 397.43 g/mole  
UV: 378 nm (in THF)  
PL: 392 nm (in film)  
TGA: > 220 °C (0.5% weight loss)  
Reference: Synthetic Metals, 167, 1-4

**LT-E206**  
**TIOPC**  
Titanium(IV) oxide phthalocyanine  
CAS No.: 26201-32-1  
Grade: Sublimed, > 99% (HPLC)  
Formula: C_{205}H_{177}N  
M.W.: 397.43 g/mole  
UV: 349, 689 nm (in CH_{2}Cl_{2})  
PL: 392 nm (in film)  
TGA: > 440 °C (0.5% weight loss)  
Reference: Synthetic Metals, 148, 205-211

**LT-E208**  
**F4-TCNQ**  
2.3,5,6-Tetrafluoro-7,7,8,8-tetracyanoquinodimethane  
CAS No.: 29261-33-4  
Grade: Sublimed, > 99% (HPLC)  
Formula: C_{205}H_{177}N  
M.W.: 397.43 g/mole  
UV: 349, 689 nm (in CH_{2}Cl_{2})  
PL: 392 nm (in film)  
TGA: > 210 °C (0.5% weight loss)  

**LT-N211**  
**PPDN**  
Pyrazino[2,3-f][1,10]phenanthroline-2,3-dicarbonitrile  
CAS No.: 244360-36-4  
Grade: Sublimed, > 99% (HPLC)  
Formula: C_{205}H_{177}N  
M.W.: 397.43 g/mole  
UV: 302, 351 nm (in THF)  
PL: 429 nm (in THF)  
TGA: > 300 °C (0.5% weight loss)  
2. Synthetic Metals, 167, 1-4

**LT-N212**  
**MeO-TPD**  
N,N,N',N'-Tetrakis(4-methoxyphenyl)benzidine  
CAS No.: 244360-36-4  
Grade: Sublimed, > 99% (HPLC)  
Formula: C_{205}H_{177}N  
M.W.: 397.43 g/mole  
UV: 302, 351 nm (in THF)  
PL: 429 nm (in THF)  
TGA: > 300 °C (0.5% weight loss)  
2. Synthetic Metals, 167, 1-4

**LT-N213**  
**MeO-Spiro-TPD**  
2,7-Bis(N,N-bis(4-methoxy-phenyl)amino)-9,9-spirobifluorene  
CAS No.: 1138220-69-5  
Grade: Sublimed, > 99% (HPLC)  
Formula: C_{205}H_{177}N  
M.W.: 397.43 g/mole  
UV: 302, 351 nm (in THF)  
PL: 429 nm (in THF)  
TGA: > 300 °C (0.5% weight loss)  
2. Synthetic Metals, 167, 1-4
| N1,N1'-(Biphenyl-4,4'-diyl)bis(N1-phenyl-N4,N4-di-m-
<table>
<thead>
<tr>
<th>tolylbenzene-1,4-diamine)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No. : 1394130-64-3</td>
</tr>
<tr>
<td>Grade : Sublimed, &gt; 99% (HPLC)</td>
</tr>
<tr>
<td>Formula : C₈H₈N₄</td>
</tr>
<tr>
<td>M.W. : 879.14 g/mole</td>
</tr>
<tr>
<td>UV : 327 nm (in THF)</td>
</tr>
<tr>
<td>PL : 458 nm (in THF)</td>
</tr>
<tr>
<td>TGA : &gt; 350 °C (0.5% weight loss)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N348 nm (in CH₂Cl₂)</th>
</tr>
</thead>
<tbody>
<tr>
<td>770.91 g/mole</td>
</tr>
<tr>
<td>C₆₀H₄₆N₄</td>
</tr>
<tr>
<td>936355-01-0</td>
</tr>
</tbody>
</table>

Organic Light Emitting Diode (OLED)

Hole Injection Layer (HIL) Materials

<table>
<thead>
<tr>
<th>LT-N221</th>
<th>HAT-CN</th>
</tr>
</thead>
</table>
| Dipyrzylo[2,3-f:2',3'-jquinoxaline-2,3,6,7,10,11-
| hexacarbonitrile | |
| CAS No. : 105598-27-4 |
| Grade : Sublimed, > 99% (HPLC) |
| Formula : C₂₄H₁₂N₆ |
| M.W. : 591.06 g/mole |
| UV : 295, 378 nm (in CH₂Cl₂) |
| PL : 422 nm (in CH₂Cl₂) |
| TGA : > 350 °C (0.5% weight loss) |

<table>
<thead>
<tr>
<th>LT-N224</th>
<th>HATNA HATNA-Cl₆</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diqunoxalino[2,3-a,3’-c]phenazine</td>
<td></td>
</tr>
<tr>
<td>CAS No. : 389121-44-2</td>
<td></td>
</tr>
<tr>
<td>Grade : Sublimed, &gt; 99% (HPLC)</td>
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</tr>
<tr>
<td>Formula : C₂₄H₁₂N₆Cl₆</td>
<td></td>
</tr>
<tr>
<td>M.W. : 591.06 g/mole</td>
<td></td>
</tr>
<tr>
<td>UV : 305 nm (in CH₂Cl₂)</td>
<td></td>
</tr>
<tr>
<td>PL : 425 nm (in CH₂Cl₂)</td>
<td></td>
</tr>
<tr>
<td>TGA : &gt; 350 °C (0.5% weight loss)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LT-N225</th>
<th>HATNA-Cl₆</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diqunoxalino[2,3-a,3’-c]phenazine</td>
<td></td>
</tr>
<tr>
<td>CAS No. : 389121-44-2</td>
<td></td>
</tr>
<tr>
<td>Grade : Sublimed, &gt; 99% (HPLC)</td>
<td></td>
</tr>
<tr>
<td>Formula : C₂₄H₁₂N₆Cl₆</td>
<td></td>
</tr>
<tr>
<td>M.W. : 591.06 g/mole</td>
<td></td>
</tr>
<tr>
<td>UV : 305 nm (in CH₂Cl₂)</td>
<td></td>
</tr>
<tr>
<td>PL : 425 nm (in CH₂Cl₂)</td>
<td></td>
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<tr>
<td>TGA : &gt; 350 °C (0.5% weight loss)</td>
<td></td>
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<table>
<thead>
<tr>
<th>LT-N226</th>
<th>HATNA-F6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diqunoxalino[2,3-a,3’-c]phenazine</td>
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<tr>
<td>CAS No. : 872140-95-9</td>
<td></td>
</tr>
<tr>
<td>Grade : Sublimed, &gt; 99% (HPLC)</td>
<td></td>
</tr>
<tr>
<td>Formula : C₂₄H₁₂N₆F₆</td>
<td></td>
</tr>
<tr>
<td>M.W. : 591.06 g/mole</td>
<td></td>
</tr>
<tr>
<td>UV : 285 nm (in CH₂Cl₂)</td>
<td></td>
</tr>
<tr>
<td>PL : 427 nm (in CH₂Cl₂)</td>
<td></td>
</tr>
</tbody>
</table>

**Our products are used for testing and research purpose; they are not guaranteed in patent contention by customer use.**
### Organic Light Emitting Diode (OLED)

#### Hole Injection Layer (HIL) Materials

**LT-N260**
- **3FTPDC8**
  - Formula: C_{16}H_{17}I_2
  - M.W.: 380.22 g/mole
  - CAS No.: 6251-01-0
  - Grade: > 99%

**LT-N261**
- **MeOPBI**
  - Formula: C_{12}H_{4}I_2
  - M.W.: 204.19 g/mole
  - CAS No.: 1518-16-7
  - Grade: > 99%

**LT-N262**
- **TNAP**
  - Formula: C_{12}H_{4}N_4
  - M.W.: 254.25 g/mole
  - CAS No.: 1207378-72-0
  - Grade: > 99%

**LT-N2001**
- **Di-NPB**
  - Formula: C_{16}H_{17}I
  - M.W.: 264.25 g/mole
  - CAS No.: 910058-11-6
  - Grade: > 99%

**LT-N2002**
- **3DMFL-BPA**
  - Formula: C_{16}H_{17}N_4
  - M.W.: 311, 355 nm (in CH_2Cl_2)

**LT-N2003**
- **NBP-DPA**
  - Formula: C_{16}H_{17}N_4
  - M.W.: 311, 355 nm (in CH_2Cl_2)

**LT-N2004**
- **β-NPB-DPA**
  - Formula: C_{16}H_{17}N_4
  - M.W.: 311, 355 nm (in CH_2Cl_2)

**LT-S973**
- **TCNQ**
  - Formula: C_{16}H_{17}I
  - M.W.: 264.25 g/mole
  - CAS No.: 1518-16-7

---

Our products are used for testing and research purpose; they are not guaranteed in patent contention by customer use.
### Organic Light Emitting Diode (OLED) Phosphorescent Host Materials

#### LT-E107
**MCP**
- **CAS No.**: 55037-78-4
- **Grade**: Sublimed, > 99% (HPLC)
- **Formula**: C65H46N3
- **M.W.**: 888.00 g/mole
- **PL**: 360 nm (in THF)
- **TGA**: > 250 °C (0.5% weight loss)

#### LT-E108
**TCP**
- **CAS No.**: 148044-07-9
- **Grade**: Sublimed, > 99% (HPLC)
- **Formula**: C65H46N3
- **M.W.**: 888.00 g/mole
- **UV**: 296, 337 nm (in THF)
- **PL**: 358 nm (in THF)
- **TGA**: > 310 °C (0.5% weight loss)

#### LT-E207
**TcTa**
- **4,4',4''-Tris(carbazol-9-yl)triphenylamine**
- **CAS No.**: 208221-29-7
- **Grade**: Sublimed, > 99% (HPLC)
- **Formula**: C78H54N3
- **M.W.**: 1153.60 g/mole
- **UV**: 293, 341 nm (in THF)
- **PL**: 363 nm (in THF)
- **TGA**: > 500 °C (0.5% weight loss)

#### LT-E409
**CBP**
- **4,4'-Bis(carbazol-9-yl)biphenyl**
- **CAS No.**: 58328-31-7
- **Grade**: Sublimed, > 99.5% (HPLC)
- **Formula**: C60H44N2
- **M.W.**: 888.00 g/mole
- **PL**: 369 nm (in THF)
- **TGA**: > 320 °C (0.5% weight loss)

#### LT-E414
**CDBP**
- **4,4',5,5'-Tetras(carbazol-9-yl)biphenyl**
- **CAS No.**: 120260-01-7
- **Grade**: Sublimed, > 99% (HPLC)
- **Formula**: C60H44N2
- **M.W.**: 888.00 g/mole
- **PL**: 349, 364 nm (in THF)
- **TGA**: > 280 °C (0.5% weight loss)

#### LT-N415
**DMPL-CBP**
- **2,7-Bis(carbazol-9-yl)-9,9-dimethylfluorene**
- **CAS No.**: 226958-06-1
- **Grade**: Sublimed, > 99% (HPLC)
- **Formula**: C60H44N2
- **M.W.**: 888.00 g/mole
- **UV**: 293, 326 nm (in THF)
- **PL**: 385 nm (in THF)
- **TGA**: > 410 °C (0.5% weight loss)

Reference: Physical Chemistry Chemical Physics (2023), 15(38), 25800-25855

#### LT-N416
**Spiro-CBP**
- **2,2',7,7'-Tetrakis(carbazol-9-yl)-9,9-spirobifluorene**
- **CAS No.**: 214078-86-1
- **Grade**: Sublimed, > 99% (HPLC)
- **Formula**: C60H44N2
- **M.W.**: 888.00 g/mole
- **PL**: 370 nm (in THF)
- **TGA**: > 480 °C (0.5% weight loss)

#### LT-N418
**DPFL-CBP**
- **2,7-Bis(carbazol-9-yl)-9,9-dimethylfluorene**
- **CAS No.**: 1174006-50-8
- **Grade**: Sublimed, > 99% (HPLC)
- **Formula**: C60H44N2
- **M.W.**: 888.00 g/mole
- **PL**: 293, 344 nm (in THF)
- **TGA**: > 330 °C (0.5% weight loss)


#### LT-N420
**Spiro-2CBP**
- **2,7-Bis(carbazol-9-yl)-9,9-spirobifluorene**
- **CAS No.**: 924899-38-7
- **Grade**: Sublimed, > 99% (HPLC)
- **Formula**: C60H44N2
- **M.W.**: 888.00 g/mole
- **PL**: 367 nm (in THF)
- **TGA**: > 360 °C (0.5% weight loss)

#### LT-N448
**UGH-2**
- **1,4-Bis(triphenylsilyl)benzene**
- **CAS No.**: 40491-34-7
- **Grade**: Sublimed, > 99% (HPLC)
- **Formula**: C60H44N2
- **M.W.**: 888.00 g/mole
- **UV**: 265 nm (in CH2CL2)
- **PL**: 296 nm (in CH2CL2)
- **TGA**: > 270 °C (0.5% weight loss)


#### LT-N449
**UGH-3**
- **1,3-Bis(triphenylsilyl)benzene**
- **CAS No.**: 18920-16-6
- **Grade**: Sublimed, > 99% (HPLC)
- **Formula**: C60H44N2
- **M.W.**: 888.00 g/mole
- **UV**: 265 nm (in THF)
- **PL**: 301, 418 nm (in THF)
- **TGA**: > 270 °C (0.5% weight loss)


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Organic Light Emitting Diode (OLED) Phosphorescent Host Materials

LT-N450 | MPMP
---|---
**Bis-[4-N,N-diethylamino-2-methylphenyl]-4-methylphenylmethane**

- **CAS No.:** 70895-80-6
- **Grade:** > 99% (HPLC)
- **Formula:** C₃₀H₃₅N₂
- **M.W.:** 426.65 g/mole
- **UV:** 271 nm (in CH₂Cl₂)
- **PL:** 432 nm (in CH₂Cl₂)
- **TGA:** > 190 °C (0.5% weight loss)


LT-N451 | DOFL-CBP
---|---
**4,4’-Di(triphenylsilyl)-biphenyl**

- **CAS No.:** 848300-30-1
- **Grade:** > 99% (HPLC)
- **Formula:** C₅₄H₆₅Si₂
- **M.W.:** 723.03 g/mole
- **UV:** 292, 340 nm (in THF)
- **PL:** 362 nm (in THF)
- **TGA:** > 310 °C (0.5% weight loss)


LT-N452 | BST
---|---
**4,4’-Di(biphenyl-4-yl)-p-terphenyl**

- **CAS No.:** 1046146-39-7
- **Grade:** > 99% (HPLC)
- **Formula:** C₈H₁₇N₂
- **M.W.:** 747.08 g/mole
- **UV:** 296 nm (in CH₂Cl₂)
- **PL:** 360 nm (in CH₂Cl₂)
- **TGA:** > 360 °C (0.5% weight loss)


LT-N453 | B58
---|---
**4,4’-Di(terphenyl)-biphenyl**

- **CAS No.:** 18826-13-6
- **Grade:** Sublimed, > 99%
- **Formula:** C₂₉H₂₆N₂
- **M.W.:** 467.69 g/mole
- **UV:** 271 nm (in CH₂Cl₂)
- **PL:** 432 nm (in CH₂Cl₂)
- **TGA:** > 320 °C (0.5% weight loss)


LT-N454 | CsSi
---|---
**9-(4-tert-Butylphenyl)-3,6-bis(triphenylsilyl)-9H-carbazole**

- **CAS No.:** 898546-82-2
- **Grade:** Sublimed, > 99%
- **Formula:** C₅₃H₅₆N₂
- **M.W.:** 723.03 g/mole
- **UV:** 273,301 nm (in CH₂Cl₂)
- **PL:** 373 nm (in CH₂Cl₂)
- **TGA:** > 320 °C (0.5% weight loss)


LT-N455 | DFC
---|---
**9-(4-tert-Butylphenyl)-3,6-di(4-methoxyphenyl)-9H-fluoren-9-yl-9H-carbazole**

- **CAS No.:** 871018-07-4
- **Grade:** Sublimed, > 99%
- **Formula:** C₅₈H₄₉NO
- **M.W.:** 840.06 g/mole
- **UV:** 341, 355 nm (in CH₂Cl₂)
- **PL:** 366 nm (in CH₂Cl₂)
- **TGA:** > 400 °C (0.5% weight loss)


LT-N456 | 35DCzPPy
---|---
**3,5-Bis(3-(9H-carbazol-9-yl)phenyl)pyridine**

- **CAS No.:** 1125547-88-7
- **Grade:** Sublimed, > 99% (HPLC)
- **Formula:** C₄₈H₃₄N₂O
- **M.W.:** 616.57 g/mole
- **UV:** 307, 317 nm (in CH₂Cl₂)
- **PL:** 239, 292 nm (in CH₂Cl₂)
- **TGA:** > 300 °C (0.5% weight loss)


LT-N457 | SimCP
---|---
**9,9-Spirobifluoren-2-yl-diphenyl-phosphine oxide**

- **CAS No.:** 1705571-72-7
- **Grade:** Sublimed, > 99% (HPLC)
- **Formula:** C₆₈H₅₆P
- **M.W.:** 561.67 g/mole
- **UV:** 341, 355 nm (in CH₂Cl₂)
- **PL:** 410 nm (in CH₂Cl₂)
- **TGA:** > 300 °C (0.5% weight loss)

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Organic Light Emitting Diode (OLED)

Organic Light Emitting Diode (OLED)
Phosphorescent Host Materials

**LT-N4006**  
PPT  
2,8-Bis(diphenylphosphoryl)dibenzochalcogenide (dibithiophene)  
CAS No. : 1019842-99-9  
Grade : Sublimed, > 99% (HPLC)  
Formula : C_{64}H_{56}N_{2}O_{2}P_{2}  
M.W. : 822.09 g/mole  
UV : 311 nm (in Toluene)  
PL : 375 nm (in Toluene)  
TGA : > 320 °C (0.5% weight loss)  

**LT-N4008**  
UGH-1  
Bis2-methyldiphenylsilylphosphine  
CAS No. : 38849-24-6  
Grade : Sublimed, > 99% (HPLC)  
Formula : C_{36}H_{22}N_{4}  
M.W. : 510.59 g/mole  
UV : 294, 338 nm (in CH_{2}Cl_{2})  
PL : 298 nm (in CH_{2}Cl_{2})  
TGA : > 340 °C (0.5% weight loss)  

**LT-N4002**  
BCBP  
2,2'-Bis(9H-carbazol-9-yl) biphenyl  
CAS No. : 676542-82-8  
Grade : Sublimed, > 99% (HPLC)  
Formula : C_{20}H_{16}N_{2}  
M.W. : 303.33 g/mole  
UV : 235, 341 nm (in CH_{2}Cl_{2})  
PL : 372 nm (in CH_{2}Cl_{2})  
TGA : > 330 °C (0.5% weight loss)  

**LT-N4009**  
SimCP2  
Bis3,5-di(9H-carbazol-9-yl)phenylphosphine  
CAS No. : 944465-42-3  
Grade : Sublimed, > 99% (HPLC)  
Formula : C_{36}H_{26}N_{2}O  
M.W. : 636.78 g/mole  
UV : 235, 341 nm (in CH_{2}Cl_{2})  
PL : 372 nm (in CH_{2}Cl_{2})  
TGA : > 380 °C (0.5% weight loss)  

**LT-N4001**  
BUPH1  
4,7-Di(9H-carbazol-9-yl)-1,10-phenanthroline  
CAS No. : 676542-82-8  
Grade : Sublimed, > 99% (HPLC)  
Formula : C_{63}H_{51}N  
M.W. : 977.26 g/mole  
UV : 324, 338 nm (in CH_{2}Cl_{2})  
PL : 315, 328 nm (in CH_{2}Cl_{2})  
TGA : > 320 °C (0.5% weight loss)  

**LT-N4012**  
CzTP  
3,9-Bis(diphenylphosphoryl)-9-phenyl-carbazole  
CAS No. : 1201649-79-7  
Grade : Sublimed, > 99% (HPLC)  
Formula : C_{36}H_{22}N_{2}S  
M.W. : 699.88 g/mole  
UV : 294, 338 nm (in CH_{2}Cl_{2})  
PL : 362 nm (in CH_{2}Cl_{2})  
TGA : > 380 °C (0.5% weight loss)  

**LT-N4010**  
TCz1  
3,9-Bis(diphenylphosphoryl)-9(2-ethyl-hexyl)-9H-carbazole  
CAS No. : 1021423-90-4  
Grade : Sublimed, > 99% (HPLC)  
Formula : C_{63}H_{51}N  
M.W. : 636.8 g/mole  
UV : 293 nm (in CH_{2}Cl_{2})  
PL : 396 nm (in CH_{2}Cl_{2})  
TGA : > 280 °C (0.5% weight loss)  

**LT-N4011**  
PP021  
1-(Diphenylphosphoryl)-9-(4-(diphenylphosphoryl)phenyl)-9H-carbazole  
CAS No. : 1228860-68-9  
Grade : Sublimed, > 99% (HPLC)  
Formula : C_{68}H_{58}N_{2}O_{2}P_{2}  
M.W. : 716.74 g/mole  
UV : 294, 338 nm (in CH_{2}Cl_{2})  
PL : 361 nm (in THF)  
TGA : > 310 °C (0.5% weight loss)  

**LT-N4013**  
DCCDBT  
2,8-Bis(9H-carbazol-9-yl)phenylphosphine  
CAS No. : 913738-04-2  
Grade : Sublimed, > 99% (HPLC)  
Formula : C_{63}H_{51}N  
M.W. : 514.64 g/mole  
UV : 292 nm (in CH_{2}Cl_{2})  
PL : 384 nm (in CH_{2}Cl_{2})  
TGA : > 330 °C (0.5% weight loss)  

**LT-N4014**  
ADBP  
10-(4'-Diphenylamino)phenyl-4'-ylacridin-9(10H)-one  
CAS No. : 1188546-10-2  
Grade : Sublimed, > 99% (HPLC)  
Formula : C_{44}H_{32}N_{2}O  
M.W. : 514.62 g/mole  
UV : 375, 394 nm (in CH_{2}Cl_{2})  
PL : 408 nm (in CH_{2}Cl_{2})  
TGA : > 310 °C (0.5% weight loss)  

**LT-N4015**  
SPPO13  
2,7-Bis(diphenylphosphoryl)-9-9-spirofluorene  
CAS No. : 12243510-13-4  
Grade : > 99% (HPLC)  
Formula : C_{44}H_{32}N_{2}O  
M.W. : 716.74 g/mole  
UV : 282 nm (in CH_{2}Cl_{2})  
PL : 373 nm (in CH_{2}Cl_{2})  
TGA : > 330 °C (0.5% weight loss)  

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Organic Light Emitting Diode (OLED)
Phosphorescent Host Materials

Organic Light Emitting Diode (OLED)

**LT-N4013**  
DCCDBT  
2,8-Bis(9H-carbazol-9-yl)phenylphosphine  
CAS No. : 913738-04-2  
Grade : Sublimed, > 99% (HPLC)  
Formula : C_{63}H_{51}N  
M.W. : 514.64 g/mole  
UV : 292 nm (in CH_{2}Cl_{2})  
PL : 384 nm (in CH_{2}Cl_{2})  
TGA : > 330 °C (0.5% weight loss)  

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**Organic Light Emitting Diode (OLED)**

## Phosphorescent Host Materials

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<tr>
<th>Compound</th>
<th>Formula</th>
<th>CAS No.</th>
<th>MW</th>
<th>Grade</th>
<th>CAS No.</th>
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<tbody>
<tr>
<td><strong>LT-N4016</strong></td>
<td>1,4-Bis(9H-carbazol-9-y)dimethylbenzene</td>
<td>166256-60-6</td>
<td>885.96 g/mole</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>1198361-98-6</td>
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<td><strong>LT-N4017</strong></td>
<td>Bis-4-(N-carbazolyl)phenylphosphine oxide</td>
<td>1233407-28-7</td>
<td>391 nm (in CH2Cl2)</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>1299463-56-1</td>
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<td><strong>LT-N4018</strong></td>
<td>POAPF</td>
<td>1198361-98-6</td>
<td>365 nm (film)</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>1415653-86-1</td>
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<td><strong>LT-N4019</strong></td>
<td>PP9021</td>
<td>1220960-64-9</td>
<td>350 °C (0.5% weight loss)</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>1270960-86-8</td>
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<td><strong>LT-N4020</strong></td>
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<td><strong>LT-N4021</strong></td>
<td>PP9021</td>
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</tr>
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**Organic Light Emitting Diode (OLED)**

## Phosphorescent Host Materials

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<tr>
<th>Compound</th>
<th>Formula</th>
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<th>Grade</th>
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<td><strong>LT-N4034</strong></td>
<td>Di(9-ethylphenyl-2-naphthyl)phenyl phosphine oxide</td>
<td>324426-27-9</td>
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<td>NP3PO</td>
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<td><strong>LT-N4036</strong></td>
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<tr>
<td><strong>LT-N4037</strong></td>
<td>PCMO</td>
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<td>350 °C (0.5% weight loss)</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
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<td><strong>LT-N4038</strong></td>
<td>PCOC</td>
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<td>Sublimed, &gt; 99% (HPLC)</td>
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Organic Light Emitting Diode (OLED)

### Phosphorescent Host Materials

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<td>Grade</td>
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<td>M.W.</td>
<td>779.93 g/mole</td>
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<td>UV</td>
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<td>PL</td>
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<td>Formula</td>
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<td>Grade</td>
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<td>M.W.</td>
<td>2403.29 g/mole</td>
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<td>UV</td>
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<td>PL</td>
<td>402 nm (in CH₂Cl₂)</td>
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<td>M.W.</td>
<td>834.47 g/mole</td>
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<td>UV</td>
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<td>PL</td>
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<td>M.W.</td>
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<td>UV</td>
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<td>PL</td>
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<td>TGA</td>
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<td>M.W.</td>
<td>533.56 g/mole</td>
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<td>UV</td>
<td>291, 338 nm (in CH₂Cl₂)</td>
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<td>TGA</td>
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<td>CAS No.</td>
<td>1349901-36-5</td>
</tr>
<tr>
<td>Grade</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
</tr>
<tr>
<td>M.W.</td>
<td>533.56 g/mole</td>
</tr>
<tr>
<td>UV</td>
<td>291, 338 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>PL</td>
<td>392 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 300 °C (0.5% weight loss)</td>
</tr>
<tr>
<td>Reference</td>
<td>Organo Electronics 12 (2012) 1711-1715</td>
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<td>LT-N4048</td>
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<td>CAS No.</td>
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<td>Sublimed, &gt; 99% (HPLC)</td>
</tr>
<tr>
<td>M.W.</td>
<td>368.36 g/mole</td>
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<tr>
<td>UV</td>
<td>288 nm (in CH₂Cl₂)</td>
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<tr>
<td>PL</td>
<td>328 nm (in CH₂Cl₂)</td>
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<tr>
<td>TGA</td>
<td>&gt; 320 °C (0.5% weight loss)</td>
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<tr>
<td>LT-N4049</td>
<td>SPP011</td>
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<td>CAS No.</td>
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<td>Grade</td>
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<tr>
<td>M.W.</td>
<td>526.63 g/mole</td>
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<td>UV</td>
<td>210, 273 nm (in CH₂Cl₂)</td>
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<td>PL</td>
<td>441 nm (in CH₂Cl₂)</td>
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<tr>
<td>TGA</td>
<td>&gt; 360 °C (0.5% weight loss)</td>
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<tr>
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<td>UV</td>
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<td>PL</td>
<td>328 nm (in CH₂Cl₂)</td>
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<tr>
<td>TGA</td>
<td>&gt; 320 °C (0.5% weight loss)</td>
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<td>Grade</td>
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<tr>
<td>M.W.</td>
<td>426.53 g/mole</td>
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<tr>
<td>UV</td>
<td>336 nm (in CH₂Cl₂)</td>
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<tr>
<td>PL</td>
<td>365 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 370 °C (0.5% weight loss)</td>
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<td>LT-N4052</td>
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<td>CAS No.</td>
<td>1424369-36-7</td>
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<tr>
<td>Grade</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
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<tr>
<td>M.W.</td>
<td>410.47 g/mole</td>
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<tr>
<td>UV</td>
<td>241, 295 nm (in CH₂Cl₂)</td>
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<tr>
<td>PL</td>
<td>364 nm (in CH₂Cl₂)</td>
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<tr>
<td>TGA</td>
<td>&gt; 270 °C (0.5% weight loss)</td>
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<tr>
<td>LT-N4053</td>
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<td>CAS No.</td>
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<td>Grade</td>
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<td>M.W.</td>
<td>426.53 g/mole</td>
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<tr>
<td>UV</td>
<td>336 nm (in CH₂Cl₂)</td>
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<tr>
<td>PL</td>
<td>365 nm (in CH₂Cl₂)</td>
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<tr>
<td>TGA</td>
<td>&gt; 370 °C (0.5% weight loss)</td>
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<td>Grade</td>
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<td>M.W.</td>
<td>426.53 g/mole</td>
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<tr>
<td>UV</td>
<td>241, 295 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>PL</td>
<td>364 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 270 °C (0.5% weight loss)</td>
</tr>
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</table>
Organic Light Emitting Diode (OLED)
Phosphorescent Host Materials

**LT-N4060** | DPEPO
---|---
Bi[(diphenylphosphino)phenyl]phosphine | ether oxide
CAS No.: 808142-23-6
Grade: Sublimed, > 99% (HPLC)
Formula: C_{40}H_{39}P
M.W.: 570.53 g/mole
UV: 368 nm (in CHCl_3)
PL: 311 nm (in CHCl_3)
TGA: > 320 °C (0.5% weight loss)


**LT-N4062** | 2,7-F-PVF
Poly(9-alk-butyli-2,7-difluoro-9H-Carbazole)
CAS No.: 1227983-33-1
Grade: M_p > 30,000 (GPC)
Formula: (C_{15}H_{11}F_rN)_n
UV: 261, 294 nm (in CHCl_3)
PL: 387 nm (in CHCl_3)
Solubility: Soluble in CHCl_3, Chlorobenzene, Dichlorobenzene


**LT-N4063** | DV-CBP
4,4'-Bis(3-[diphenylamino]methyl-9H-carbazol-9-yl)biphenyl
CAS No.: 1428901-78-3
Grade: > 99% (HPLC)
Formula: C_{44}H_{38}N_2
M.W.: 748.91 g/mole
UV: 246, 295 nm (in CHCl_3)
PL: 381 nm (in CHCl_3)

Reference: Organic Electronics, 14, 2013, 1614–1620

**LT-N4070** | pB8CzCz
9-(4-(9H-Pyridin-2(1H)-yl)indol-9-yl)phenyl-9H-3,9'-bicarbazole
CAS No.: 1446517-60-7
Grade: Sublimed, > 99% (HPLC)
Formula: C_{45}H_{37}N_3
M.W.: 574.67 g/mole
UV: 239, 294 nm (in CHCl_3)
PL: 381 nm (in CHCl_3)
TGA: > 250 °C (0.5% weight loss)


**LT-N4072** | PYD-2Cz
2,6-Di(9H-carbazol-9-yl)pyrimidine
CAS No.: 168127-49-9
Grade: Sublimed, > 99% (HPLC)
Formula: C_{48}H_{34}N_4
M.W.: 409.48 g/mole
UV: 241, 290 nm (in CHCl_3)
PL: 313 nm (in THF)
TGA: > 250 °C (0.5% weight loss)


**LT-N4077** | PKV
Poly(9-vinylcarbazole)
CAS No.: 25067-59-8
Grade: M_p > 20,000 (GPC)
Formula: C_{42}H_{33}N_2
M.W.: 562.66 g/mole
UV: 240, 292 nm (in CHCl_3)
PL: 476 nm (in CHCl_3)
TGA: > 280 °C (0.5% weight loss)


**LT-N4078** | PKV
Poly(9-vinylcarbazole)
CAS No.: 25067-59-8
Grade: M_p > 100,000 (GPC)
Formula: C_{42}H_{33}N_2
M.W.: 589.75 g/mole
UV: 316 nm (in Toluene)
PL: 376 nm (in Toluene)
TGA: > 270 °C (0.5% weight loss)

Reference: Journal of Materials Chemistry: C: Materials for Optical and Electronic Devices (2013), 1(40), 6575-6584

**LT-N4080** | 46DCzPPM
4,6-Bis(9H-carbazol-9-yl)pyrimidine
CAS No.: 1262678-77-2
Grade: Sublimed, > 99% (HPLC)
Formula: C_{42}H_{33}N_2
M.W.: 699.85 g/mole
UV: 278 nm (in CHCl_3)
PL: 377 nm (in CHCl_3)
TGA: > 280 °C (0.5% weight loss)


**LT-N4085** | BC2Ph
9,9'-Diphenyl-9,9'-spirobifluorene
CAS No.: 571102-62-2
Grade: Sublimed, > 99% (HPLC)
Formula: C_{45}H_{32}N_2
M.W.: 484.59 g/mole
UV: 303 nm (in CHCl_3)
TGA: > 250 °C (0.5% weight loss)


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Our products are used for testing and research purpose; they are not guaranteed in patent contention by customer use.

Head office: 2F, No. 17, R&D Road II, Science-Based Industrial Park, Hsin-Chu 30076, Taiwan, R.O.C., Tel: +886-3-666-3188, Fax: +886-3-666-9288
Email: sales@lumtec.com.tw, Web: http://www.lumtec.com.tw
Organic Light Emitting Diode (OLED)  
Fluorescent Host Materials

**Phosphorescent Host Materials**

<table>
<thead>
<tr>
<th>Code</th>
<th>Name</th>
<th>Formula</th>
<th>Grade</th>
<th>CAS No.</th>
<th>M.W.</th>
<th>UV</th>
<th>PL</th>
<th>TGA</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT-N4086</td>
<td>CBBPE</td>
<td>9,9-((2,1,3-benzothiadiazol-2-yl)bis(9H-carbazole)</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>1470161-29-5</td>
<td>525.78 g/mole</td>
<td>340 nm (in CH₂Cl₂)</td>
<td>450 nm (in CH₂Cl₂)</td>
<td>&gt; 250 °C (0.5% weight loss)</td>
</tr>
<tr>
<td>LT-N4088</td>
<td>BCzSCN</td>
<td>9,9'-((2,1,3-benzothiazol-2-yl)bis(9H-carbazole)6-carboxilic acid</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>1462896-48-5</td>
<td>509.6 g/mole</td>
<td>250, 301 nm (in CH₂Cl₂)</td>
<td>416 nm (in CH₂Cl₂)</td>
<td>&gt; 270 °C (0.5% weight loss)</td>
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<tr>
<td>LT-N4099</td>
<td>m-cbzt</td>
<td>9-(3-(3,5-Di(pyridin-2-yl)-1H-1,2,4-triazol-1-yl)phenyl)-9H-carbazole</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>1361953-33-4</td>
<td>464.32 g/mole</td>
<td>293, 340 nm (in THF)</td>
<td>427 nm (in THF)</td>
<td>&gt; 270 °C (0.5% weight loss)</td>
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</tbody>
</table>

**Fluorescent Host Materials**

<table>
<thead>
<tr>
<th>Code</th>
<th>Name</th>
<th>Formula</th>
<th>Grade</th>
<th>CAS No.</th>
<th>M.W.</th>
<th>UV</th>
<th>PL</th>
<th>TGA</th>
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<tbody>
<tr>
<td>LT-E401</td>
<td>Alq3</td>
<td>Tricatic acid (9,9-dietylfluorene)</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>2085-33-8</td>
<td>459.43 g/mole</td>
<td>375, 395 nm (in CH₂Cl₂)</td>
<td>419 nm (in THF)</td>
<td>&gt; 270 °C (0.5% weight loss)</td>
</tr>
<tr>
<td>LT-E408</td>
<td>TDAF</td>
<td>2,7-Bis(9H-diethylfluorene-2-yl)-9,9-diethylfluorene</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>474918-42-2</td>
<td>1035.36 g/mole</td>
<td>353 nm (in THF)</td>
<td>419 nm (in THF)</td>
<td>&gt; 370 °C (0.5% weight loss)</td>
</tr>
<tr>
<td>LT-E403</td>
<td>ADN</td>
<td>9,10-Di(naphthalene-2,3-diyl)anthracene</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>122648-99-1</td>
<td>430.54 g/mole</td>
<td>375, 395 nm (in CH₂Cl₂)</td>
<td>419 nm (in THF)</td>
<td>&gt; 290 °C (0.5% weight loss)</td>
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<tr>
<td>LT-E410</td>
<td>MADN</td>
<td>2-Methyl-9,10-bis(naphthalene-2,3-diyl)anthracene</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>804560-00-7</td>
<td>444.57 g/mole</td>
<td>379, 399 nm (in CH₂Cl₂)</td>
<td>439 nm (in CH₂Cl₂)</td>
<td>&gt; 300 °C (0.5% weight loss)</td>
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<tr>
<td>LT-E404</td>
<td>TADN</td>
<td>2-tert-Butyl-9,10-bis(naphthalene-2,3-diyl)anthracene</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>274905-73-6</td>
<td>486.64 g/mole</td>
<td>375, 395 nm (in THF)</td>
<td>431 nm (in THF)</td>
<td>&gt; 290 °C (0.5% weight loss)</td>
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<tr>
<td>LT-E411</td>
<td>BSBF</td>
<td>2-(9,9-Spirobifluorene-2,7-diyl)bis-[1,1,3,1]silafluorocycloalkane</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>664345-18-0</td>
<td>630.77 g/mole</td>
<td>379, 399 nm (in CH₂Cl₂)</td>
<td>439 nm (in CH₂Cl₂)</td>
<td>&gt; 310 °C (0.5% weight loss)</td>
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</table>

Reference: Journal of Materials Chemistry (2012), 4(18), 9177-9185
Organic Light Emitting Diode (OLED)

**Fluorescent Host Materials**

### LT-E412

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<tr>
<th>2,8-Bi(9,9-spirobifluoren-2-yl)-9,9-spirobifluorene</th>
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<tbody>
<tr>
<td>CAS No.: 518997-91-6</td>
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<tr>
<td>Grade: Sublimed, &gt; 99% (HPLC)</td>
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<tr>
<td>Formula: C_{57}H_{32}</td>
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<tr>
<td>M.W.: 945.13 g/mole</td>
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<tr>
<td>UV: 350 nm (in THF)</td>
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<tr>
<td>PL: 415 nm (in THF)</td>
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<tr>
<td>TGA: &gt; 390 °C (0.5% weight loss)</td>
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### LT-E413

<table>
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<tr>
<th>BDAF 2-[9-(Di-4-tert-butylphenyl)-fluoren-2-yl]-9,9-di-methylphenylfluorene</th>
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<td>CAS No.: 854046-47-2</td>
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<tr>
<td>Grade: Sublimed, &gt; 97% (HPLC)</td>
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<tr>
<td>Formula: C_{52}H_{34}</td>
</tr>
<tr>
<td>M.W.: &gt; 99% (HPLC)</td>
</tr>
<tr>
<td>UV: 333 nm (in THF)</td>
</tr>
<tr>
<td>PL: 388 nm (in THF)</td>
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<tr>
<td>TGA: &gt; 310 °C (0.5% weight loss)</td>
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### LT-E428

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<tr>
<th>2,2'-Bi(9,9-spirobifluoren-2-yl)-9,9-spirobifluorene</th>
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<tr>
<td>CAS No.: 831222-16-3</td>
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<tr>
<td>Grade: Sublimed, &gt; 98% (HPLC)</td>
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<tr>
<td>Formula: C_{52}H_{34}</td>
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<tr>
<td>M.W.: 716.86 g/mole</td>
</tr>
<tr>
<td>UV: 279, 347 nm (in THF)</td>
</tr>
<tr>
<td>PL: 424 nm (in THF)</td>
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<tr>
<td>TGA: &gt; 440 °C (0.5% weight loss)</td>
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### LT-N429

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<tr>
<th>1,3,5-Tris(pyren-1-yl)benzene</th>
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<tbody>
<tr>
<td>CAS No.: 349666-25-7</td>
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<td>Grade: Sublimed, &gt; 95% (HPLC)</td>
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<tr>
<td>Formula: C_{38}H_{22}</td>
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<tr>
<td>M.W.: 690.91 g/mole</td>
</tr>
<tr>
<td>UV: 280, 352 nm (in THF)</td>
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<tr>
<td>PL: 388 nm (in THF)</td>
</tr>
<tr>
<td>TGA: &gt; 390 °C (0.5% weight loss)</td>
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<td>Reference: Synthetic Metals 143 (2005) 89-96</td>
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### LT-N447

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<tr>
<th>9,9-Bis[4-(pyrenyl)phenyl]-fluorene</th>
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<td>CAS No.: 1174006-47-3</td>
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<td>Grade: Sublimed, &gt; 99% (HPLC)</td>
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<td>Formula: C_{52}H_{34}</td>
</tr>
<tr>
<td>M.W.: 718.88 g/mole</td>
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<tr>
<td>UV: 280, 344 nm (in THF)</td>
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<tr>
<td>PL: 402 nm (in THF)</td>
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<tr>
<td>TGA: &gt; 430 °C (0.5% weight loss)</td>
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### LT-N452

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<th>2,2'-Bi(10-diphenylanthracene)</th>
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<td>CAS No.: 172285-72-2</td>
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<tr>
<td>Grade: Sublimed, &gt; 99% (HPLC)</td>
</tr>
<tr>
<td>Formula: C_{40}H_{26}</td>
</tr>
<tr>
<td>M.W.: 716.86 g/mole</td>
</tr>
<tr>
<td>UV: 279, 347 nm (in THF)</td>
</tr>
<tr>
<td>PL: 424 nm (in THF)</td>
</tr>
<tr>
<td>TGA: &gt; 440 °C (0.5% weight loss)</td>
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</table>

### LT-N453

<table>
<thead>
<tr>
<th>2,7-Di(9,9-spirobifluoren-9H)-fluorene</th>
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<tbody>
<tr>
<td>CAS No.: 1254039-84-3</td>
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<td>Grade: Sublimed, &gt; 99%</td>
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<tr>
<td>Formula: C_{57}H_{32}</td>
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<td>M.W.: 965.73 g/mole</td>
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<tr>
<td>UV: 350 nm (in THF)</td>
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<tr>
<td>PL: 620 nm (in THF)</td>
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<tr>
<td>TGA: &gt; 360 °C (0.5% weight loss)</td>
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### LT-N458

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<tr>
<th>Spiro-Pyre 2,7-Dipropy-9,9-spirobifluorene</th>
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<tr>
<td>CAS No.: 886456-80-0</td>
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<td>Grade: Sublimed, &gt; 99% (HPLC)</td>
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<tr>
<td>Formula: C_{57}H_{32}</td>
</tr>
<tr>
<td>M.W.: 716.86 g/mole</td>
</tr>
<tr>
<td>UV: 363 nm (in THF)</td>
</tr>
<tr>
<td>PL: 424 nm (in THF)</td>
</tr>
<tr>
<td>TGA: &gt; 440 °C (0.5% weight loss)</td>
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</table>

### LT-N472

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<tr>
<th>p-Bpye 1,4-Di(pyren-1-yl)benzene</th>
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<tr>
<td>CAS No.: 475460-77-6</td>
</tr>
<tr>
<td>Grade: Sublimed, &gt; 99% (HPLC)</td>
</tr>
<tr>
<td>Formula: C_{38}H_{22}</td>
</tr>
<tr>
<td>M.W.: 478.58 g/mole</td>
</tr>
<tr>
<td>UV: 280, 351 nm (in CH_{2}Cl_{2})</td>
</tr>
<tr>
<td>PL: 431 nm (in CH_{2}Cl_{2})</td>
</tr>
<tr>
<td>TGA: &gt; 380 °C (0.5% weight loss)</td>
</tr>
</tbody>
</table>

### LT-N479

<table>
<thead>
<tr>
<th>DNP 3,9-Di(naphthalen-2-yl) and 1,10-di(naphthalen-2-yl) porphyrin mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.: 959611-30-4 and 919089-75-1</td>
</tr>
<tr>
<td>Grade: Sublimed, &gt; 99%</td>
</tr>
<tr>
<td>Formula: C_{52}H_{34}</td>
</tr>
<tr>
<td>M.W.: 504.62 g/mole</td>
</tr>
<tr>
<td>UV: 344, 460 nm (in THF)</td>
</tr>
<tr>
<td>PL: 488 nm (in THF)</td>
</tr>
<tr>
<td>TGA: &gt; 360 °C (0.5% weight loss)</td>
</tr>
<tr>
<td>Reference: Journal of Applied Physics, 102,24908(2007)</td>
</tr>
</tbody>
</table>

### LT-N481

<table>
<thead>
<tr>
<th>DMPP 1,1'-2,5-Dimethyl-1,4-phenylene-diynes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.: 1036404-84-8</td>
</tr>
<tr>
<td>Grade: Sublimed, &gt; 99% (HPLC)</td>
</tr>
<tr>
<td>Formula: C_{57}H_{32}</td>
</tr>
<tr>
<td>M.W.: 506.63 g/mole</td>
</tr>
<tr>
<td>UV: 397 nm (in CH_{2}Cl_{2})</td>
</tr>
<tr>
<td>PL: 384 nm (in THF)</td>
</tr>
<tr>
<td>TGA: &gt; 330 °C (0.5% weight loss)</td>
</tr>
</tbody>
</table>

---

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---

Head office: 2F, No. 17, R&D Road II, Science-Based Industrial Park, Hsin-Chu 30076, Taiwan, R.O.C. Tel: +886-3-666-3188, Fax: +886-3-666-9288 Email: sales@lumtec.com.tw, Web: http://www.lumtec.com.tw
**Organic Light Emitting Diode (OLED)**

**Fluorescent Host Materials**

**LT-N488** | BANE
---|---
10,10'-Dibiphenyl-4-yl-9,9'-bianthracene

**LT-N489** | 4P-NPB
N,N'-Di-(1-naphthalenyl)-N,N'-diphenyl-[1,1':4',1'':4'',1''':4'''-terphenyl]-4,4'''-diamine

**LT-N490** | BUBH-3
4,4'''-Di(10-naphthalen-1-yl-9,9'-difluorene-2-yl)phenyl

**LT-N4900** | CMP
9,9'-(4,4''-Biphenyl-1,1'-diyl) bis(3,6-di-tert-butyl-9H-carbazole-9-yI)

**LT-N4901** | 6FAIq3
Tri(4-fluorophenyl)quinoliniumaluminium

---

**LT-N4903** | DBP
Dibenzoc[def][1,1':2,3']-dibenzothiophene[1,2,3-cdf]1,2,3'-dipyrene

**LT-N4904** | BAnF8Pye
1-(7-(9,9'-Bianthracen-10-yl)-9,9-dihexyl-9H-fluoren-2-yl)pyrene

**LT-N4905** | DAnF6Pye
1-(7-(9,9'-Bianthracen-10-yl)-9,9-diodoctyl-9H-fluoren-2-yl)pyrene

**LT-N4906** | ADP
9,10-Diphenylanthracene

---

**Reference:**
Organic Light Emitting Diode (OLED)  
Fluorescent Host Materials

LT-N4093 | Znq2  
Bis(8-hydroxyquinoline) zinc  
CAS No.: 13978-85-3  
Formula: C_{38}H_{30}N_{2}O_{5}Zn  
M.W.: 682.57 g/mole  
PL: > 380 nm (in CH_{2}Cl_{2})  
TGA: > 220 °C (0.5% weight loss)  
Reference: Organic Electronics (2008), 9(5), 625-634

LT-N4094 | CPPyC  
9-(5-(3-(9H-Carbazol-9-yl)phenyl)pyridin-3-yl)-9H-carbazole  
CAS No.: 1588238-16-7  
Grade: > 99% (HPLC)  
Formula: C_{37}H_{25}N_{4}O_{4}  
M.W.: 516.57 g/mole  
PL: > 200 °C (0.5% weight loss)  
Reference: Chemistry of Materials (2014), 26(7), 2368-2373

LT-N4096 | SF3PO  
Bis(8-hydroxyquinoline)-2-yl-phenylphosphane oxide  
CAS No.: 1454615-69-0  
Grade: > 99% (HPLC)  
Formula: C_{35}H_{23}N_{3}O_{2}P  
M.W.: 516.57 g/mole  
PL: > 200 °C (0.5% weight loss)  
Reference: Organic Electronics (2013), 14(7), 1924-1930

Organic Light Emitting Diode (OLED)  
Green Dopant Materials

LT-E501 | Coumarin 6  
3-(2-Benzothiazolyl)-5-(diethylamine)coumarin  
CAS No.: 38215-36-0  
Grade: Sublimed, > 99% (HPLC)  
Formula: C_{35}H_{33}N_{2}O_{5}  
M.W.: 611.56 g/mole  
PL: > 250 °C (0.5% weight loss)  
Reference: Organic Electronics (2013), 14(7), 1924-1930

LT-E502 | CS45T  
2,3,4,5-Tetrahydro-1,1,7,7-tetramethyl-1H,5H,11H-10-(2-benzothiazolyl)quinolizino[9,9a,1gh]coumarin  
CAS No.: 153306-71-4  
Grade: Sublimed, > 99% (HPLC)  
Formula: C_{36}H_{30}N_{4}O_{5}  
M.W.: 532.56 g/mole  
PL: > 270 °C (0.5% weight loss)  
Reference: Organic Electronics (2008), 9(5), 625-634

LT-E503 | DMQA  
N,N’-Dimethyl-quinacridone  
CAS No.: 19205-19-7  
Grade: Sublimed, > 99% (HPLC)  
Formula: C_{22}H_{16}N_{2}O_{2}  
M.W.: 340.37 g/mole  
PL: > 300 °C (0.5% weight loss)  

LT-E504 | I(ppy)_3  
Tris(2-phenylpyridine)iridium(III)  
CAS No.: 94928-86-6  
Grade: Sublimed, > 99% (HPLC)  
Formula: C_{18}H_{20}I_{2}N_{2}O_{2}  
M.W.: 634.78 g/mole  
PL: > 300 °C (0.5% weight loss)  
Reference: Organic Electronics (2008), 9(5), 625-634

LT-E505 | Tris(2-phenylpyridine)(acetylacetonate)iridium(III)  
CAS No.: 33752-85-9  
Grade: Sublimed, > 99% (HPLC)  
Formula: C_{26}H_{26}I_{2}N_{2}O_{2}S  
M.W.: 686.86 g/mole  
PL: > 300 °C (0.5% weight loss)  

Reference: Organic Electronics (2013), 14(7), 1924-1930


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9,10-Bis[N,N-di-(p-tolyl)-amino]anthracene

Bis[2-(2-hydroxyphenyl)benzothiazolato]zinc(II)

TGA

PL

UV

M.W.

Formula

Grade

CAS No.

> 300 °C (0.5% weight loss)

458 nm (in CH$_2$Cl$_2$)

292, 458 nm (in CH$_2$Cl$_2$)

58280-31-2

Sublimed, > 99% (HPLC)

540.70 g/mole

C$_{40}$H$_{32}$N$_2$


> 270 °C (0.5% weight loss)

532 nm (in CH$_2$Cl$_2$)

294, 471 nm (in CH$_2$Cl$_2$)

540.70 g/mole

C$_{40}$H$_{32}$N$_2$


> 280 °C (0.5% weight loss)

554 nm (in CH$_2$Cl$_2$)

294, 471 nm (in CH$_2$Cl$_2$)

568.75 g/mole

C$_{42}$H$_{36}$N$_2$

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fac-Tris(2-(3-p-xylyl)phenyl)pyridine iridium(III)

Bis(2-phenylpyridinato)[2-(biphenyl-3-yl)pyridinato]iridium(III)

TGA

PL

UV

M.W.

Formula

Grade

CAS No.

> 340 °C (0.5% weight loss)

262, 275 nm (in THF)

730.88 g/mole

C$_{39}$H$_{28}$IrN$_3$

Sublimed, > 99%

788.97 g/mole

C$_{60}$H$_{40}$N$_2$


> 270 °C (0.5% weight loss)

291 nm (in Toluene)

584.62 g/mole

C$_{38}$H$_{24}$N$_4$O$_3$

Sublimed, > 99%

1447998-13-1

Ir(npy)$_2$acac

Tris(2-phenyl-3-methyl-pyridine)iridium(III)

CAS No: 639006-72-7

M.W: 696.86 g/mole

UV: 283, 383 nm (in CH$_2$Cl$_2$)

PL: 522 nm (in CH$_2$Cl$_2$)

1338784-40-9

Ir(ppy)$_2$(m-bppy)

Tris(2-phenyl-pyridyl)iridium

CAS No: 177799-16-5

M.W: 568.75 g/mole

UV: 294, 471 nm (in CH$_2$Cl$_2$)

PL: 554 nm (in CH$_2$Cl$_2$)

>> 30% (0.5% weight loss)


### Organic Light Emitting Diode (OLED)  
#### Blue Dopant Materials

<table>
<thead>
<tr>
<th>Code</th>
<th>Name</th>
<th>Molecular Formula</th>
<th>CAS No.</th>
<th>Grade</th>
<th>UV (nm) (in CH$_2$Cl$_2$)</th>
<th>PL (nm) (in THF)</th>
<th>M.W. (g/mole)</th>
<th>TGA (°C) (0.5% weight loss)</th>
<th>CAS No.</th>
<th>Grade</th>
<th>UV (nm) (in CH$_2$Cl$_2$)</th>
<th>PL (nm) (in THF)</th>
<th>M.W. (g/mole)</th>
<th>TGA (°C) (0.5% weight loss)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT-E601</td>
<td>BCzVBi</td>
<td>C$<em>{20}$H$</em>{12}$</td>
<td>677275-33-1</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>421, 438 nm</td>
<td>476 nm</td>
<td>476.73 g/mole</td>
<td>&gt; 390 °C (0.5% weight loss)</td>
<td>596103-58-1</td>
<td>&gt; 99% (HPLC)</td>
<td>476 nm</td>
<td>476.73 g/mole</td>
<td>&gt; 390 °C (0.5% weight loss)</td>
<td></td>
</tr>
<tr>
<td>LT-E602</td>
<td>Perylene</td>
<td>C$<em>{20}$H$</em>{12}$</td>
<td>198-55-0</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>410, 436 nm</td>
<td>471 nm</td>
<td>252.31 g/mole</td>
<td>&gt; 200 °C (0.5% weight loss)</td>
<td>436798-89-9</td>
<td>&gt; 99% (HPLC)</td>
<td>391 nm</td>
<td>391 g/mole</td>
<td>&gt; 360 °C (0.5% weight loss)</td>
<td></td>
</tr>
<tr>
<td>LT-E603</td>
<td>TBPe</td>
<td>C$<em>{20}$H$</em>{12}$</td>
<td>677275-33-1</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>421, 438 nm</td>
<td>476 nm</td>
<td>476.73 g/mole</td>
<td>&gt; 220 °C (0.5% weight loss)</td>
<td>596103-58-1</td>
<td>&gt; 99% (HPLC)</td>
<td>476 nm</td>
<td>476.73 g/mole</td>
<td>&gt; 390 °C (0.5% weight loss)</td>
<td></td>
</tr>
<tr>
<td>LT-E604</td>
<td>BCzV8</td>
<td>C$<em>{20}$H$</em>{12}$</td>
<td>677275-33-1</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>421, 438 nm</td>
<td>476 nm</td>
<td>476.73 g/mole</td>
<td>&gt; 390 °C (0.5% weight loss)</td>
<td>596103-58-1</td>
<td>&gt; 99% (HPLC)</td>
<td>476 nm</td>
<td>476.73 g/mole</td>
<td>&gt; 390 °C (0.5% weight loss)</td>
<td></td>
</tr>
<tr>
<td>LT-E605</td>
<td>DPVBi</td>
<td>C$<em>{36}$H$</em>{44}$</td>
<td>523977-57-3</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>405 nm</td>
<td>475 nm</td>
<td>252.31 g/mole</td>
<td>&gt; 200 °C (0.5% weight loss)</td>
<td>436798-89-9</td>
<td>&gt; 99% (HPLC)</td>
<td>391 nm</td>
<td>391 g/mole</td>
<td>&gt; 360 °C (0.5% weight loss)</td>
<td></td>
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<tr>
<td>LT-E606</td>
<td>DPWB</td>
<td>C$<em>{36}$H$</em>{44}$</td>
<td>523977-57-3</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>405 nm</td>
<td>475 nm</td>
<td>252.31 g/mole</td>
<td>&gt; 200 °C (0.5% weight loss)</td>
<td>436798-89-9</td>
<td>&gt; 99% (HPLC)</td>
<td>391 nm</td>
<td>391 g/mole</td>
<td>&gt; 360 °C (0.5% weight loss)</td>
<td></td>
</tr>
<tr>
<td>LT-N620</td>
<td>Fr6</td>
<td>C$<em>{36}$H$</em>{44}$</td>
<td>677275-33-1</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>421, 438 nm</td>
<td>476 nm</td>
<td>476.73 g/mole</td>
<td>&gt; 390 °C (0.5% weight loss)</td>
<td>596103-58-1</td>
<td>&gt; 99% (HPLC)</td>
<td>476 nm</td>
<td>476.73 g/mole</td>
<td>&gt; 390 °C (0.5% weight loss)</td>
<td></td>
</tr>
<tr>
<td>LT-N621</td>
<td>BNP3FL</td>
<td>C$<em>{36}$H$</em>{44}$</td>
<td>677275-33-1</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>421, 438 nm</td>
<td>476 nm</td>
<td>476.73 g/mole</td>
<td>&gt; 390 °C (0.5% weight loss)</td>
<td>596103-58-1</td>
<td>&gt; 99% (HPLC)</td>
<td>476 nm</td>
<td>476.73 g/mole</td>
<td>&gt; 390 °C (0.5% weight loss)</td>
<td></td>
</tr>
</tbody>
</table>

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Email: sales@lumtec.com.tw, Web: http://www.lumtec.com.tw
### Organic Light Emitting Diode (OLED) **Blue Dopant Materials**

#### LT-N627

<table>
<thead>
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<th>N-BDAVBi</th>
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<tbody>
<tr>
<td>N-(4-(1H)-1,2-(6)-(1H)-2(H)-Diphenylaminostyryl)naphthalen-2-ylphenyl</td>
</tr>
<tr>
<td>CAS No.</td>
</tr>
<tr>
<td>Grade</td>
</tr>
<tr>
<td>M.W.</td>
</tr>
<tr>
<td>UV</td>
</tr>
<tr>
<td>PL</td>
</tr>
<tr>
<td>TGA</td>
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</tbody>
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#### LT-N629

<table>
<thead>
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<th>fac-Ir(Pmb)_3</th>
</tr>
</thead>
<tbody>
<tr>
<td>fac-Iridium(III) tribis(1-phenyl-3-methylbenzimidazolin-2-ylidene-C,C(2)')</td>
</tr>
<tr>
<td>CAS No.</td>
</tr>
<tr>
<td>Grade</td>
</tr>
<tr>
<td>M.W.</td>
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<td>UV</td>
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<td>PL</td>
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<td>TGA</td>
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#### LT-N630

<table>
<thead>
<tr>
<th>mer-Ir(Pmb)_3</th>
</tr>
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<tbody>
<tr>
<td>mer-Iridium(III) tribis(1-phenyl-3-methylbenzimidazolin-2-ylidene-C,C(2)')</td>
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<tr>
<td>CAS No.</td>
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<tr>
<td>Grade</td>
</tr>
<tr>
<td>M.W.</td>
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<td>UV</td>
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#### LT-N631

<table>
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<tr>
<th>DSA-Ph</th>
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<tbody>
<tr>
<td>1,4-Di(4-(1H)-1,2-(6)-(1H)-2(H)-Diphenylaminostyryl)benzene</td>
</tr>
<tr>
<td>CAS No.</td>
</tr>
<tr>
<td>Grade</td>
</tr>
<tr>
<td>M.W.</td>
</tr>
<tr>
<td>UV</td>
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<tr>
<td>PL</td>
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<td>TGA</td>
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#### LT-N632

<table>
<thead>
<tr>
<th>Bc2S8</th>
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</thead>
<tbody>
<tr>
<td>1,4-Bis(9H-carbazol-9-yl)benzene</td>
</tr>
<tr>
<td>CAS No.</td>
</tr>
<tr>
<td>Grade</td>
</tr>
<tr>
<td>M.W.</td>
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<tr>
<td>UV</td>
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#### LT-N633

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<tbody>
<tr>
<td>2,6-Di(4-(1H)-1,2-(6)-(1H)-2(H)-Diphenylaminostyryl)naphthalen-2-amine</td>
</tr>
<tr>
<td>CAS No.</td>
</tr>
<tr>
<td>Grade</td>
</tr>
<tr>
<td>M.W.</td>
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<tr>
<td>UV</td>
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<td>TGA</td>
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#### LT-N634

<table>
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<tr>
<th>Bepp2</th>
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<tbody>
<tr>
<td>Bis(2-hydroxyphenyl)pyridine/erythro-5-HPV</td>
</tr>
<tr>
<td>CAS No.</td>
</tr>
<tr>
<td>Grade</td>
</tr>
<tr>
<td>M.W.</td>
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<tr>
<td>UV</td>
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<tr>
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#### LT-N635

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<th>FlrN4</th>
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<tbody>
<tr>
<td>Bis(4-difluorophenylpyridinato)(5-(pyridin-2-yl)-1H-tetrazolato)iron(II)</td>
</tr>
<tr>
<td>CAS No.</td>
</tr>
<tr>
<td>Grade</td>
</tr>
<tr>
<td>M.W.</td>
</tr>
<tr>
<td>UV</td>
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<tr>
<td>PL</td>
</tr>
<tr>
<td>TGA</td>
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#### LT-N643

<table>
<thead>
<tr>
<th>fac-Ir(iprmpni)_3</th>
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</thead>
<tbody>
<tr>
<td>fac-Tris(2,6-diisopropylphenyl)-2-phenyl-1H-imidazol[4,5-f]iridium(III)</td>
</tr>
<tr>
<td>CAS No.</td>
</tr>
<tr>
<td>Grade</td>
</tr>
<tr>
<td>M.W.</td>
</tr>
<tr>
<td>UV</td>
</tr>
<tr>
<td>PL</td>
</tr>
<tr>
<td>TGA</td>
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</table>

#### LT-N644

<table>
<thead>
<tr>
<th>fac-Ir(iprmpni)_3</th>
</tr>
</thead>
<tbody>
<tr>
<td>fac-Tris(2,6-diisopropylphenyl)-2-phenyl-1H-imidazol[4,5-f]iridium(III)</td>
</tr>
<tr>
<td>CAS No.</td>
</tr>
<tr>
<td>Grade</td>
</tr>
<tr>
<td>M.W.</td>
</tr>
<tr>
<td>UV</td>
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<tr>
<td>PL</td>
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<td>TGA</td>
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#### LT-N645

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<th>DPAVF</th>
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<tbody>
<tr>
<td>8-(9H-carbazol-9-yl)-8,9-dihydrofluoren-2-yl vinylpyridine/9-phenylfluorene</td>
</tr>
<tr>
<td>CAS No.</td>
</tr>
<tr>
<td>Grade</td>
</tr>
<tr>
<td>M.W.</td>
</tr>
<tr>
<td>UV</td>
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<tr>
<td>PL</td>
</tr>
<tr>
<td>TGA</td>
</tr>
</tbody>
</table>

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Head office: 2F, No. 17, R&D Road II, Science-Based Industrial Park, Hsin-Chu 30076, Taiwan, R.O.C. Tel: +886-3-666-3188, Fax: +886-3-666-9288
Email: sales@lumtec.com.tw, Web: http://www.lumtec.com.tw

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### Organic Light Emitting Diode (OLED) Blue Dopant Materials

**LT-N646**  
**mer-Ir(pmi)**  
mer-Tris(2-phenyl-3-methylimidazolin-2-yliden-CC(2) irreidium(III))  
CAS No.: 870099-65-7  
Grade: > 99% (HPLC)  
Formula: C_{26}H_{18}IrN_{7}  
M.W.: 706.86 g/mole  
UV: 275 nm (in CH_{2}Cl_{2})  
FL: 483 nm (in CH_{2}Cl_{2})  
TGA: > 300 °C (0.5% weight loss)  

**LT-N655**  
**fpm(Ir(ppyz)**  
Bis(4-fluorophenyl)-3-methylimidazolin-2-yliden-C(naphtalene-1-ylinum(III))  
CAS No.: 870382-54-3  
Grade: > 99% (HPLC)  
Formula: C_{26}H_{18}IrN_{7}  
M.W.: 706.86 g/mole  
UV: 275 nm (in CH_{2}Cl_{2})  
FL: 483 nm (in CH_{2}Cl_{2})  
TGA: > 300 °C (0.5% weight loss)  

**LT-N658**  
**fac-Ir(dpbcic)_{3}**  
fac-Tris(1,3-diphenyl-benzimidazolin-2-yliden-C(naphtalene-1-ylinum(III))  
CAS No.: 1333342-54-3  
Grade: > 99% (HPLC)  
Formula: C_{57}H_{42}IrN_{6}  
M.W.: 1003.2 g/mole  
UV: 281, 302 nm (in CH_{2}Cl_{2})  
FL: 472 nm (in CH_{2}Cl_{2})  
TGA: > 300 °C (0.5% weight loss)  

**LT-N662**  
**PCAN**  
9-(9-Phenylcarbazole-3-y1)-10-(naphthalene-1-ylinum(III))  
CAS No.: 1261580-75-9  
Grade: Sublimed, > 99% (HPLC)  
Formula: C_{57}H_{42}N_{6}  
M.W.: 545.67 g/mole  
UV: 244, 397 nm (in CH_{2}Cl_{2})  
FL: 441 nm (in CH_{2}Cl_{2})  
TGA: > 330 °C (0.5% weight loss)  

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**Reference:**  

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**Organic Light Emitting Diode (OLED)**

## Blue Dopant Materials

### LT-N669
- **Formula:** Bisd(tert-butyl-2,6-difluoro-2'-bipyridine)[acetylacetonate]iridium(III)
- **CAS No.:** 1421058-47-0
- **Grade:** > 99% (HPLC)
- **Formula:** C₁₇₁₇₇₁₃₂₄₃₅₁₆₁₇₁₈₁₉₂₀₂₁₂₂₂₃₂₄₂₅₂₆₇₈₉₁₀₁₁₁₂₁₃₁₄₁₅₁₆₁₇₁₈₁₉₂₀₂₁₂₂₂₃₂₄₂₅₂₆₇₈₉₁₀₁₁
- **M.W.:** 785.85 g/mole
- **UV:** 244 nm (in CH₂Cl₂)
- **PL:** 454 nm (in CH₂Cl₂)
- **TGA:** > 280 °C (0.5% weight loss)

**Reference:** J. Mater. Chem. C, 2013, 1, 1070-1075

### LT-S9058
- **Formula:** 4-A-4H-carbazol-9-yltriphenylamine
- **CAS No.:** 850594-34-2
- **Grade:** Sublimed, > 99%
- **Formula:** C₅₂H₃₆N₂
- **M.W.:** 688.86 g/mole
- **UV:** 253, 367 nm (in CH₂Cl₂)
- **PL:** 452 nm (in CH₂Cl₂)
- **TGA:** > 320 °C (0.5% weight loss)

### LT-N675
- **Formula:** 10,10'-(4,4'-(4-Phenyl-4H-1,2,4-triazole-3,5-diyl)bis(4,1-phenylene))bis(10H-phenoxazine)
- **CAS No.:** 1498411-20-3
- **Grade:** > 99% (HPLC)
- **Formula:** C₄₄H₃₉N₅O₂
- **M.W.:** 659.73 g/mole
- **UV:** 463 nm (in Toluene)
- **TGA:** > 300 °C (0.5% weight loss)

### LT-N678
- **Formula:** Ban-(3,5)-CF3
- **CAS No.:** 1506456-00-7
- **Grade:** > 99% (HPLC)
- **Formula:** C₁₈H₁₇F₁₂
- **M.W.:** 778.63 g/mole
- **UV:** 290, 400 nm (in CH₂Cl₂)
- **PL:** 440 nm (in CH₂Cl₂)
- **TGA:** > 270 °C (0.5% weight loss)

**Reference:** Journal of Materials Chemistry C: Materials for Optical and Electronic Devices (2013), 2(48), 8117-8127

### LT-N679
- **Formula:** Ir(tfpd).pic
- **CAS No.:** 1417790-60-3
- **Grade:** > 99% (HPLC)
- **Formula:** C₈₅H₇₂N₂O₂
- **M.W.:** 728.92 g/mole
- **UV:** 408 nm (in CH₂Cl₂)
- **PL:** 468 nm (in CH₂Cl₂)
- **TGA:** > 220 °C (0.5% weight loss)

**Reference:** Dyes and Pigments (2013), 96(1), 237-241

### LT-N680
- **Formula:** BD-6MDPA
- **CAS No.:** 1262281-91-3
- **Grade:** > 99% (HPLC)
- **Formula:** C₁₉H₁₉N₂O₂
- **M.W.:** 718.92 g/mole
- **UV:** 408 nm (in CH₂Cl₂)
- **PL:** 468 nm (in CH₂Cl₂)
- **TGA:** > 220 °C (0.5% weight loss)

**Reference:** Dyes and Pigments (2013), 96(2), 257-264

### LT-N832
- **CAS No.:** 850018-19-8
- **Grade:** Sublimed, > 99%
- **Formula:** C₆₂H₂₄F₁₂
- **M.W.:** 624.82 g/mole
- **UV:** 311, 376, 396 nm (in THF)
- **PL:** 448 nm (in THF)
- **TGA:** > 400 °C (0.5% weight loss)

**Reference:** Dyes and Pigments (2013), 96(1), 237-241

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**Organic Light Emitting Diode (OLED)**

**Blue Dopant Materials**
Organic Light Emitting Diode (OLED)

Red Dopant Materials

<table>
<thead>
<tr>
<th>LT-E701</th>
<th>DCM</th>
<th>(6-2:2:2-(4-Dimethylamino)styryl)-6-methyl-4H-pyran-4-yliden)malononitrile</th>
</tr>
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<tbody>
<tr>
<td>CAS No.</td>
<td>51325-91-8</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td></td>
</tr>
<tr>
<td>M.W.</td>
<td>303.36 g/mole</td>
<td></td>
</tr>
<tr>
<td>UV</td>
<td>462 nm (in THF)</td>
<td></td>
</tr>
<tr>
<td>PL</td>
<td>577 nm (in THF)</td>
<td></td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 250 °C (0.5% weight loss)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LT-E704</th>
<th>DCTB</th>
<th>4-(Dicyanomethylene)-2-tert-butyl-6-(1,1,7,7-tetramethyljulolid-9-enyl)-4H-pyran</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.</td>
<td>200052-70-6</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td></td>
</tr>
<tr>
<td>M.W.</td>
<td>453.62 g/mole</td>
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<tr>
<td>UV</td>
<td>501 nm (in THF)</td>
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</tr>
<tr>
<td>PL</td>
<td>602 nm (in THF)</td>
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</tr>
<tr>
<td>TGA</td>
<td>&gt; 250 °C (0.5% weight loss)</td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th>LT-E702</th>
<th>DCM2</th>
<th>4-(Dicyanomethylene)-2-methyl-6-tert-butylyl-9-ethyl-4H-pyran</th>
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</thead>
<tbody>
<tr>
<td>CAS No.</td>
<td>51325-95-2</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>&gt; 99% (HPLC)</td>
<td></td>
</tr>
<tr>
<td>M.W.</td>
<td>353.43 g/mole</td>
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<tr>
<td>UV</td>
<td>497 nm (in THF)</td>
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</tr>
<tr>
<td>PL</td>
<td>605 nm (in THF)</td>
<td></td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 230 °C (0.5% weight loss)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LT-E706</th>
<th>Eu(dmb)(Phen)</th>
<th>Tris(benzylmethylenephthalocyaninato)europium(III)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.</td>
<td>17904-83-5</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>Sublimed, &gt; 99%</td>
<td></td>
</tr>
<tr>
<td>Formula</td>
<td>C27H16N4Eu</td>
<td></td>
</tr>
<tr>
<td>M.W.</td>
<td>1001.93 g/mole</td>
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<tr>
<td>UV</td>
<td>257, 355 nm (in THF)</td>
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</tr>
<tr>
<td>PL</td>
<td>615 nm (in THF)</td>
<td></td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 180 °C (0.5% weight loss)</td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>LT-E707</th>
<th>Rubrene</th>
<th>5,6,11,12-Tetraphenylnaphthacene</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.</td>
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</tr>
<tr>
<td>Grade</td>
<td>Sublimed, &gt; 99%</td>
<td></td>
</tr>
<tr>
<td>Formula</td>
<td>C28H22</td>
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<tr>
<td>M.W.</td>
<td>352.67 g/mole</td>
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<tr>
<td>UV</td>
<td>299 nm (in THF)</td>
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</tr>
<tr>
<td>PL</td>
<td>533 nm (in THF)</td>
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</tr>
<tr>
<td>TGA</td>
<td>&gt; 250 °C (0.5% weight loss)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LT-E709</th>
<th>Ir(btp)(acac)</th>
<th>Bis(2-benzimidazolyl-2-yl-pyridine)(acetylacetonate)iridium(III)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.</td>
<td>343978-79-0</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td></td>
</tr>
<tr>
<td>Formula</td>
<td>C53H43IrN2O2</td>
<td></td>
</tr>
<tr>
<td>M.W.</td>
<td>932.14 g/mole</td>
<td></td>
</tr>
<tr>
<td>UV</td>
<td>283 nm (in THF)</td>
<td></td>
</tr>
<tr>
<td>PL</td>
<td>615 nm (in THF)</td>
<td></td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 350 °C (0.5% weight loss)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LT-N721</th>
<th>Ir(flig)(acac)</th>
<th>Bis(2-(9,9-dimethyl-9H-fluoren-2-yl)isouquinoline-(acetylacetonate)iridium(III)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.</td>
<td>1617506-77-0</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>Sublimed, &gt; 98.5% (HPLC)</td>
<td></td>
</tr>
<tr>
<td>Formula</td>
<td>C53H43IrN2O2</td>
<td></td>
</tr>
<tr>
<td>M.W.</td>
<td>932.14 g/mole</td>
<td></td>
</tr>
<tr>
<td>UV</td>
<td>285, 368 nm (in THF)</td>
<td></td>
</tr>
<tr>
<td>PL</td>
<td>653 nm (in THF)</td>
<td></td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 350 °C (0.5% weight loss)</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>LT-N724</th>
<th>Ir(flig)(acac)</th>
<th>Bis(2-(9,9-dimethyl-9H-fluoren-2-yl)isouquinoline-(acetylacetonate)iridium(III)</th>
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</thead>
<tbody>
<tr>
<td>CAS No.</td>
<td>889750-25-8</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>Sublimed, &gt; 99%</td>
<td></td>
</tr>
<tr>
<td>Formula</td>
<td>C53H43IrN2O2</td>
<td></td>
</tr>
<tr>
<td>M.W.</td>
<td>932.14 g/mole</td>
<td></td>
</tr>
<tr>
<td>UV</td>
<td>309, 368 nm (in THF)</td>
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</tr>
<tr>
<td>PL</td>
<td>615 nm (in THF)</td>
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</tr>
<tr>
<td>TGA</td>
<td>&gt; 310 °C (0.5% weight loss)</td>
<td></td>
</tr>
</tbody>
</table>

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### Organic Light Emitting Diode (OLED)

#### Red Dopant Materials

<table>
<thead>
<tr>
<th>LT-N733</th>
<th>Ir(BT)(acac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis(2-phenylbenzimidazo[1,2-a]benzene-1,3-dione)iridium(III)</td>
<td></td>
</tr>
<tr>
<td>CAS No. : 33752-88-2</td>
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</tr>
<tr>
<td>Grade : Sublimed, &gt; 98.5% (HPLC)</td>
<td></td>
</tr>
<tr>
<td>Formula : C_{61}H_{45}IrN_{6}O_{3}</td>
<td></td>
</tr>
<tr>
<td>M.W. : 959.4</td>
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</tr>
<tr>
<td>PL : 563 nm (in THF)</td>
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</tr>
<tr>
<td>TGA : &gt; 270 °C (0.5% weight loss)</td>
<td></td>
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<table>
<thead>
<tr>
<th>LT-N742</th>
<th>Ir(Mphp)</th>
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</thead>
<tbody>
<tr>
<td>Tris(2-phenyl-4-methylquinoline)iridium(III)</td>
<td></td>
</tr>
<tr>
<td>CAS No. : 1433853-90-7</td>
<td></td>
</tr>
<tr>
<td>Grade : Sublimed, &gt; 99% (HPLC)</td>
<td></td>
</tr>
<tr>
<td>Formula : C_{61}H_{45}IrN_{6}O_{3}</td>
<td></td>
</tr>
<tr>
<td>M.W. : 959.4</td>
<td></td>
</tr>
<tr>
<td>PL : 604 nm (in CH_{2}Cl_{2})</td>
<td></td>
</tr>
<tr>
<td>TGA : &gt; 350 °C (0.5% weight loss)</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>LT-N740</th>
<th>Hex-Ir(phq)(acac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis(2-(n-hexylquinoline)(2-(3-methylphenyl)pyridinate)iridium(III)</td>
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<tr>
<td>CAS No. : 1404197-18-7</td>
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<tr>
<td>Grade : 99% (HPLC)</td>
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</tr>
<tr>
<td>Formula : C_{61}H_{45}IrN_{6}O_{3}</td>
<td></td>
</tr>
<tr>
<td>M.W. : 959.4</td>
<td></td>
</tr>
<tr>
<td>UV : 344 nm (in CHCl_{3})</td>
<td></td>
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<tr>
<td>PL : 588 nm (in CHCl_{3})</td>
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<tr>
<td>TGA : &gt; 210 °C (0.5% weight loss)</td>
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<table>
<thead>
<tr>
<th>LT-N743</th>
<th>Ir(phq)tpy</th>
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</thead>
<tbody>
<tr>
<td>Bis(2-phenylquinoline)(2-(3-methylphenyl)quinoline)</td>
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<tr>
<td>CAS No. : 1208460-37-2</td>
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<tr>
<td>Grade : &gt; 99% (HPLC)</td>
<td></td>
</tr>
<tr>
<td>Formula : C_{61}H_{45}IrN_{6}O_{3}</td>
<td></td>
</tr>
<tr>
<td>M.W. : 959.4</td>
<td></td>
</tr>
<tr>
<td>UV : 256, 271 nm (in CHCl_{3})</td>
<td></td>
</tr>
<tr>
<td>PL : 604 nm (in CHCl_{3})</td>
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<td>TGA : &gt; 320 °C (0.5% weight loss)</td>
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<table>
<thead>
<tr>
<th>LT-N744</th>
<th>Ir(bf)3(acac)</th>
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</thead>
<tbody>
<tr>
<td>Bis(2-(9,9-dimethyl-9H-fluoren-2-yl)benzimidazo[1,2-a]benzene-1,3-dione)iridium(III)</td>
<td></td>
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<tr>
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<td>Grade : &gt; 99% (HPLC)</td>
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<tr>
<td>Formula : C_{61}H_{45}IrN_{6}O_{3}</td>
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<tr>
<td>M.W. : 959.4</td>
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<tr>
<td>UV : 421 nm (in THF)</td>
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<tr>
<td>PL : 538 nm (in THF)</td>
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<tr>
<td>TGA : &gt; 270 °C (0.5% weight loss)</td>
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<tr>
<th>LT-N745</th>
<th>fac-Ir(ppy)PC</th>
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<tbody>
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<td>Grade : Sublimed, &gt; 99% (HPLC)</td>
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<tr>
<td>Formula : C_{61}H_{45}IrN_{6}O_{3}</td>
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<tr>
<td>M.W. : 959.4</td>
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<tr>
<td>UV : 319 nm (in CHCl_{3})</td>
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<tr>
<td>PL : 550 nm (in CHCl_{3})</td>
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<tr>
<td>TGA : &gt; 340 °C (0.5% weight loss)</td>
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<thead>
<tr>
<th>LT-N749</th>
<th>DCQTB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis(2-2'-dicyanomethylene-6,6'-diphenyl-1,1'-biphenyl)iridium(III)</td>
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<tr>
<td>CAS No. : 913079-91-9</td>
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<tr>
<td>Grade : &gt; 98% (HPLC)</td>
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<td>Formula : C_{61}H_{45}IrN_{6}O_{3}</td>
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<td>PL : 629 nm (in THF)</td>
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<td>TGA : &gt; 340 °C (0.5% weight loss)</td>
<td></td>
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<table>
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<tr>
<th>LT-N751</th>
<th>Hex-Ir(piq)(acac)</th>
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</thead>
<tbody>
<tr>
<td>Bis(2-(n-hexylphenyl)isoquinoline)(acetylacetonate)iridium(III)</td>
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<tr>
<td>CAS No. : 435294-13-6</td>
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<tr>
<td>Grade : &gt; 99% (HPLC)</td>
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</tr>
<tr>
<td>Formula : C_{61}H_{45}IrN_{6}O_{3}</td>
<td></td>
</tr>
<tr>
<td>M.W. : 959.4</td>
<td></td>
</tr>
<tr>
<td>UV : 301, 346 nm (in CHCl_{3})</td>
<td></td>
</tr>
<tr>
<td>PL : 610 nm (in CHCl_{3})</td>
<td></td>
</tr>
<tr>
<td>TGA : &gt; 200 °C (0.5% weight loss)</td>
<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>LT-N752</th>
<th>POPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platinum(II) octaethylporphine</td>
<td></td>
</tr>
<tr>
<td>CAS No. : 31248-39-2</td>
<td></td>
</tr>
<tr>
<td>Grade : &gt; 95% (HPLC)</td>
<td></td>
</tr>
<tr>
<td>Formula : C_{61}H_{45}IrN_{6}O_{3}</td>
<td></td>
</tr>
<tr>
<td>M.W. : 959.4</td>
<td></td>
</tr>
<tr>
<td>UV : 389, 334 nm (in CHCl_{3})</td>
<td></td>
</tr>
<tr>
<td>PL : 689 nm (in CHCl_{3})</td>
<td></td>
</tr>
<tr>
<td>TGA : &gt; 290 °C (0.5% weight loss)</td>
<td></td>
</tr>
</tbody>
</table>

---

**Reference:**


—

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Email: sales@lumtec.com.tw, Web: http://www.lumtec.com.tw

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Email: sales@lumtec.com.tw, Web: http://www.lumtec.com.tw
### Organic Light Emitting Diode (OLED)

#### Red Dopant Materials

<table>
<thead>
<tr>
<th>LT-N753</th>
<th>Ir(MDO)₂(acac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.</td>
<td>536755-34-7</td>
</tr>
<tr>
<td>Grade</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
</tr>
<tr>
<td>Formula</td>
<td>C₆H₁₂IrN₂O₂</td>
</tr>
<tr>
<td>M.W.</td>
<td>390.41 g/mole</td>
</tr>
<tr>
<td>UV</td>
<td>325, 428 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>PL</td>
<td>615 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 280 °C (0.5% weight loss)</td>
</tr>
</tbody>
</table>

*Reference: J. Mater. Chem. 2003, 13, 13, p224-228*

<table>
<thead>
<tr>
<th>LT-N754</th>
<th>Hex-Ir(piq)₃</th>
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<tr>
<td>CAS No.</td>
<td>1240249-29-9</td>
</tr>
<tr>
<td>Grade</td>
<td>&gt; 99% (HPLC)</td>
</tr>
<tr>
<td>Formula</td>
<td>C₂₀H₂₄IrN₃O₂</td>
</tr>
<tr>
<td>M.W.</td>
<td>475.66 g/mole</td>
</tr>
<tr>
<td>UV</td>
<td>325 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>PL</td>
<td>615 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 250 °C (0.5% weight loss)</td>
</tr>
</tbody>
</table>

*Reference: Synthetic Metals 201 (2011) 148-152*

<table>
<thead>
<tr>
<th>LT-N755</th>
<th>Ir(dmpq)acac</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.</td>
<td>909542-64-9</td>
</tr>
<tr>
<td>Grade</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
</tr>
<tr>
<td>Formula</td>
<td>C₆H₁₂IrN₂O₂</td>
</tr>
<tr>
<td>M.W.</td>
<td>390.41 g/mole</td>
</tr>
<tr>
<td>UV</td>
<td>273, 348 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>PL</td>
<td>600 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 320 °C (0.5% weight loss)</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>LT-N757</th>
<th>Ir(dmpq)</th>
</tr>
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<tbody>
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<td>CAS No.</td>
<td>1228537-77-6</td>
</tr>
<tr>
<td>Grade</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
</tr>
<tr>
<td>Formula</td>
<td>C₃₀H₂₉IrN₂O₂</td>
</tr>
<tr>
<td>M.W.</td>
<td>525.85 g/mole</td>
</tr>
<tr>
<td>UV</td>
<td>325, 428 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>PL</td>
<td>615 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 280 °C (0.5% weight loss)</td>
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</tbody>
</table>

*Reference: J. Mater. Chem. 2003, 13, 13, p224-228*

<table>
<thead>
<tr>
<th>LT-N762</th>
<th>Ir(dmpq)acac</th>
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<tr>
<td>CAS No.</td>
<td>1542693-87-7</td>
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<tr>
<td>Grade</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
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<tr>
<td>Formula</td>
<td>C₆H₁₂IrN₂O₂</td>
</tr>
<tr>
<td>M.W.</td>
<td>390.41 g/mole</td>
</tr>
<tr>
<td>UV</td>
<td>273, 348 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>PL</td>
<td>600 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 320 °C (0.5% weight loss)</td>
</tr>
</tbody>
</table>

*Reference: Synthetic Metals 201 (2011) 148-152*

<table>
<thead>
<tr>
<th>LT-N765</th>
<th>FPQIrpic</th>
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<tbody>
<tr>
<td>CAS No.</td>
<td>1621179-34-7</td>
</tr>
<tr>
<td>Grade</td>
<td>&gt; 99% (HPLC)</td>
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<tr>
<td>Formula</td>
<td>C₂₀H₁₄IrN₂O₂</td>
</tr>
<tr>
<td>M.W.</td>
<td>475.66 g/mole</td>
</tr>
<tr>
<td>UV</td>
<td>342 nm (in THF)</td>
</tr>
<tr>
<td>PL</td>
<td>554 nm (in THF)</td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 260 °C (0.5% weight loss)</td>
</tr>
</tbody>
</table>

*Reference: J. Mater. Chem. 2003, 13, 13, p224-228*

<table>
<thead>
<tr>
<th>LT-N767</th>
<th>Ir(DMP)3</th>
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</thead>
<tbody>
<tr>
<td>CAS No.</td>
<td>1240249-29-9</td>
</tr>
<tr>
<td>Grade</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
</tr>
<tr>
<td>Formula</td>
<td>C₂₀H₂₄IrN₃O₂</td>
</tr>
<tr>
<td>M.W.</td>
<td>475.66 g/mole</td>
</tr>
<tr>
<td>UV</td>
<td>325 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>PL</td>
<td>615 nm (in CH₂Cl₂)</td>
</tr>
<tr>
<td>TGA</td>
<td>&gt; 250 °C (0.5% weight loss)</td>
</tr>
</tbody>
</table>

*Reference: J. Mater. Chem. 2003, 13, 13, p224-228*
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- **LT-E301**: Liq
  - **8-Hydroxyquinolino-lithium**
  - **CAS No.**: 850918-68-2
  - **Grade**: Sublimed, > 99.5% (HPLC)
  - **Formula**: C9H6NO\_Li
  - **M.W.**: Sublimed, > 99% (HPLC)
  - **CAS No.**: 850918-68-2
  - **TGA**: > 210 °C (0.5% weight loss)

- **LT-E302**: TPBi
  - **2,2',2''-(1,1,5-Benztricarboxylato)-tris(1-phenyl-1H-benzimidazole)**
  - **CAS No.**: 192108-85-9
  - **Grade**: Sublimed, > 99% (HPLC)
  - **Formula**: C26H20N2
  - **M.W.**: Sublimed, > 99% (HPLC)
  - **CAS No.**: 192108-85-9
  - **TGA**: > 350 °C (0.5% weight loss)

- **LT-E303**: PBD
  - **2-(4-Biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole**
  - **CAS No.**: 15082-28-7
  - **Grade**: Sublimed, > 99% (HPLC)
  - **Formula**: C26H20N2
  - **M.W.**: Sublimed, > 99% (HPLC)
  - **CAS No.**: 15082-28-7
  - **TGA**: > 210 °C (0.5% weight loss)

- **LT-E304**: BCP
  - **2,9-Dimethyl-4,7-diphenyl-1,10-phenanthroline**
  - **CAS No.**: 4733-39-5
  - **Grade**: Sublimed, > 99% (HPLC)
  - **Formula**: C26H20N2
  - **M.W.**: Sublimed, > 99% (HPLC)
  - **CAS No.**: 4733-39-5
  - **TGA**: > 240 °C (0.5% weight loss)

- **LT-E305**: Bphen
  - **4,7-Diphenyl-1,10-phenanthroline**
  - **CAS No.**: 1662-02-1
  - **Grade**: Sublimed, > 99.5% (HPLC)
  - **Formula**: C26H20N2
  - **M.W.**: Sublimed, > 99% (HPLC)
  - **CAS No.**: 1662-02-1
  - **TGA**: > 350 °C (0.5% weight loss)

- **LT-E407**: BAiq
  - **Bis[2-methyl-8-quinolino(3,4-h)-benzofluorene] aluminum**
  - **CAS No.**: 146162-54-1
  - **Grade**: Sublimed, > 99%
  - **Formula**: C45H30N6
  - **M.W.**: Sublimed, > 99% (HPLC)
  - **CAS No.**: 146162-54-1
  - **TGA**: > 300 °C (0.5% weight loss)

- **LT-N821**: Bpy-FOX-D
  - **1,3-Bis(2,2'-bipyridyl-6-yl)-1,3,4-oxadiazole-5-yl aluminum**
  - **CAS No.**: 1174006-45-1
  - **Grade**: Sublimed, > 99% (HPLC)
  - **Formula**: C24H17N3Al
  - **M.W.**: Sublimed, > 99% (HPLC)
  - **CAS No.**: 1174006-45-1
  - **TGA**: > 300 °C (0.5% weight loss)

- **LT-N836**: TAQ
  - **3-(4-Biphenyl)-4-phenyl-1,2,4-triazole**
  - **CAS No.**: 150405-69-9
  - **Grade**: Sublimed, > 98% (HPLC)
  - **Formula**: C32H25N2O3Al
  - **M.W.**: Sublimed, > 99% (HPLC)
  - **CAS No.**: 150405-69-9
  - **TGA**: > 260 °C (0.5% weight loss)


### Organic Light Emitting Diode (OLED)
#### Electron Transport Layer / Hole Blocking Layer (ETL/HBL) Materials

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS No.</th>
<th>Grade</th>
<th>Formula</th>
<th>M.W.</th>
<th>UV</th>
<th>PL</th>
<th>TGA</th>
<th>Reference</th>
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</thead>
<tbody>
<tr>
<td>LT-N855</td>
<td>138872-67-5</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>C_{30}H_{20}N_{4}</td>
<td>599.61 g/mole</td>
<td>382 nm (in THF)</td>
<td>250 nm (in CH(_2)Cl(_2))</td>
<td>&gt; 360 °C (0.5% weight loss)</td>
<td>Chem. Mater. 2008, 20, 5951–5953</td>
</tr>
<tr>
<td>LT-N856</td>
<td>3TPYMb</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>C_{30}H_{30}N_{4} O_{2}</td>
<td>478.58 g/mole</td>
<td>275 nm (in CH(_2)Cl(_2))</td>
<td>353 nm (in CH(_2)Cl(_2))</td>
<td>&gt; 345 °C (0.5% weight loss)</td>
<td>Adv. Mater., 2008, 20, p2125-2130</td>
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<tr>
<td>LT-N857</td>
<td>2-NPIP</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>C_{26}H_{16}BeN_{2}O_{2}</td>
<td>397.43 g/mole</td>
<td>440 nm (in CH(_2)Cl(_2))</td>
<td>406 nm (in CH(_2)Cl(_2))</td>
<td>&gt; 310 °C (0.5% weight loss)</td>
<td>Appl. Phys. Lett. 92, 063306 2008</td>
</tr>
<tr>
<td>LT-N858</td>
<td>HN\text{bphen}</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>C_{12}H_{8}N_{4}</td>
<td>331 nm (in THF)</td>
<td>246, 282, 351 nm (in CH(_2)Cl(_2))</td>
<td>254 nm (in CH(_2)Cl(_2))</td>
<td>&gt; 370 °C (0.5% weight loss)</td>
<td>J. Am. Chem. Soc. 1998, 120, p285</td>
</tr>
<tr>
<td>LT-N859</td>
<td>TmPyPB</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>C_{26}H_{18}N_{3}</td>
<td>490.67 g/mole</td>
<td>251 nm (in CH(_2)Cl(_2))</td>
<td>366 nm (in CH(_2)Cl(_2))</td>
<td>&gt; 370 °C (0.5% weight loss)</td>
<td>Adv. Mater., 2008, 20, 2172–2174</td>
</tr>
<tr>
<td>LT-N860</td>
<td>BmPyPhB</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>C_{37}H_{21}N</td>
<td>314.47 g/mole</td>
<td>214, 254, 335 nm (in CH(_2)Cl(_2))</td>
<td>253 nm (in CH(_2)Cl(_2))</td>
<td>&gt; 345 °C (0.5% weight loss)</td>
<td>J. Am. Chem. Soc. 2008, 130, p6515–6523</td>
</tr>
<tr>
<td>LT-N861</td>
<td>POPyg</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>C_{26}H_{16}BeN_{2}O_{2}</td>
<td>479.57 g/mole</td>
<td>254 nm (in CH(_2)Cl(_2))</td>
<td>366 nm (in CH(_2)Cl(_2))</td>
<td>&gt; 345 °C (0.5% weight loss)</td>
<td>J. Am. Chem. Soc. 2008, 130, p6515–6523</td>
</tr>
<tr>
<td>LT-N862</td>
<td>2-(Naphthalen-2-yl)-4,7-diphenyl-1,10-phenanthroline</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>C_{35}H_{22}N_{2}</td>
<td>766.93 g/mole</td>
<td>253 nm (in THF)</td>
<td>246, 282, 351 nm (in CH(_2)Cl(_2))</td>
<td>&gt; 370 °C (0.5% weight loss)</td>
<td>J. Am. Chem. Soc. 2008, 130, p6515–6523</td>
</tr>
</tbody>
</table>

**Organic Light Emitting Diode (OLED)**

**Electron Transport Layer / Hole Blocking Layer (ETL/HBL) Materials**

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### Organic Light Emitting Diode (OLED)

#### Electron Transport Layer / Hole Blocking Layer (ETL/HBL) Materials

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Formula</th>
<th>Grade</th>
<th>M.W.</th>
<th>UV</th>
<th>Solubility</th>
<th>TGA</th>
<th>Reference</th>
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<tbody>
<tr>
<td>LT-N872</td>
<td>TpPyPB</td>
<td>1,3,5-Tris(3-phenyl-imidazol-2-yl) benzene</td>
<td>921205-02-9</td>
<td>&gt; 350 °C (0.5% weight loss)</td>
<td>&gt; 330 °C (0.5% weight loss)</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>LT-N883</td>
</tr>
<tr>
<td>LT-N876</td>
<td>B3PYMPM</td>
<td>4,6-Bis(3,5-di(4-phenyl-imidazol-2-yl) benzene</td>
<td>925427-60-3</td>
<td>&gt; 350 °C (0.5% weight loss)</td>
<td>&gt; 330 °C (0.5% weight loss)</td>
<td>Sublimed, &gt; 99% (HPLC)</td>
<td>LT-N886</td>
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<tr>
<td>LT-N875</td>
<td>TmPPPtyz</td>
<td>2,4:5,3'-Tetrakis(4,4'-dialkoxy-2,2'-bis(2-phenyl-5-(2-methyl-imidazolyl)-benzyl)</td>
<td>939430-31-6</td>
<td>&gt; 350 °C (0.5% weight loss)</td>
<td>&gt; 330 °C (0.5% weight loss)</td>
<td>Sublimed, &gt; 99% (NMR)</td>
<td>LT-N887</td>
</tr>
</tbody>
</table>

**Reference:**
- 1. Organic Electronics 2011, 1763-1767
Organic Light Emitting Diode (OLED)  
Electron Transport Layer / Hole Blocking Layer (ETL/HBL) Materials

LT-N889  |  Tm3PyP26PyB  
1,3,5-Tris(3-pyridin-3-ylphenyl)pyridin-2-ylbenzene  
CAS No.: 1492917-78-8  
Grade: Sublimed, > 99% (NMR)  
Formula: C<sub>45</sub>H<sub>35</sub>N<sub>14</sub>  
M.W.: 678.9 g/mole  
UV: 255 nm (in CH<sub>2</sub>Cl<sub>2</sub>)  
PL: > 280 °C (0.5% weight loss)  
Reference: Journal of Physical Chemistry (2014), 118(26), 13423-13429

LT-N891  |  B4PPPpyPM  
4,6-Bis(3,5-diphenyl-4-ylphenyl)-2-(3-pyridin-3-yl)phenylpyrimidine  
CAS No.: 1382639-70-4  
Grade: Sublimed, > 99% (NMR)  
Formula: C<sub>45</sub>H<sub>35</sub>N<sub>14</sub>  
M.W.: 693.8 g/mole  
UV: 255 nm (in CH<sub>2</sub>Cl<sub>2</sub>)  
PL: > 280 °C (0.5% weight loss)  
Reference: Journal of Physical Chemistry (2014), 118(26), 13423-13429

LT-N890  |  B3PyPMP  
4,6-Bis(1,3,5-tris(3-pyridin-3-ylphenyl)pyridin-2-yl)phenylpyrimidine  
CAS No.: 1382639-67-9  
Grade: Sublimed, > 99% (NMR)  
Formula: C<sub>45</sub>H<sub>35</sub>N<sub>14</sub>  
M.W.: 617.7 g/mole  
UV: 255 nm (in CH<sub>2</sub>Cl<sub>2</sub>)  
PL: > 280 °C (0.5% weight loss)  
Reference: Journal of Physical Chemistry (2014), 118(26), 13423-13429

LT-N894  |  FPO-Br  
Poly(9,9-diC<sub>12</sub>H<sub>25</sub>Br<sub>2</sub>N<sub>2</sub>-(N,N,N-trimethylammonium)benzyl)fluorene-co-C<sub>2</sub>phenylene)benzene  
CAS No.: 1447848-17-0  
Grade: Sublimed, > 99% (HPLC)  
Formula: C<sub>43</sub>H<sub>28</sub>N<sub>4</sub>  
M.W.: 696.71 g/mole  
UV: 255 nm (in CH<sub>2</sub>Cl<sub>2</sub>)  
PL: 357 nm (in CH<sub>2</sub>Cl<sub>2</sub>)  
TGA: > 350 °C (0.5% weight loss)  

LT-N8001  |  DBimiBphen  
4,7-Diphenyl-2,9-bis(4-(1-phenylbenzo[d]imidazol-2-yl)phenyl)-1,10-phenanthroline  
CAS No.: 1311378-95-6  
Grade: Sublimed, > 99% (HPLC)  
Formula: C<sub>60</sub>H<sub>45</sub>O<sub>3</sub>P<sub>3</sub>  
M.W.: 906.92 g/mole  
UV: 259 nm (in CH<sub>2</sub>Cl<sub>2</sub>)  
PL: 349 nm (in CH<sub>2</sub>Cl<sub>2</sub>)  
TGA: > 250 °C (0.5% weight loss)  
Reference: Journal of Physical Chemistry (2014), 118(26), 13423-13429

LT-N8002  |  Bimiphen  
4,7-Diphenyl-2,9-bis(4-(1-phenyl-1H-benzo[d]imidazol-2-yl)phenyl)-1,10-phenanthroline  
CAS No.: 1447848-17-0  
Grade: Sublimed, > 99% (HPLC)  
Formula: C<sub>60</sub>H<sub>45</sub>O<sub>3</sub>P<sub>3</sub>  
M.W.: 906.92 g/mole  
UV: 259 nm (in CH<sub>2</sub>Cl<sub>2</sub>)  
PL: 349 nm (in CH<sub>2</sub>Cl<sub>2</sub>)  
TGA: > 250 °C (0.5% weight loss)  

Our products are used for testing and research purpose; they are not guaranteed in patent contention by customer use.
### Organic Light Emitting Diode (OLED)

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#### Electron Injection Layer (EIL) Materials / Metal

<table>
<thead>
<tr>
<th>LT-E001</th>
<th>LiF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lithium fluoride</strong></td>
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<tr>
<td>CAS No.   : 7789-24-4</td>
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<tr>
<td>Grade     : &gt; 99.99%</td>
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<tr>
<td>Formula   : LiF</td>
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</tr>
<tr>
<td>M.W.      : 25.94 g/mole</td>
<td></td>
</tr>
<tr>
<td>Melting Point : 848 °C</td>
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<tr>
<td>Boiling Point : 1681 °C</td>
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<table>
<thead>
<tr>
<th>LT-E002</th>
<th>Cs₂CO₃</th>
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<tbody>
<tr>
<td><strong>Cesium carbonate</strong></td>
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<tr>
<td>CAS No.   : 534-17-8</td>
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<td>Grade     : &gt; 99.994%</td>
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<tr>
<td>Formula   : Cs₂CO₃</td>
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<tr>
<td>M.W.      : 325.82 g/mole</td>
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<tr>
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<table>
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<tr>
<th>LT-E003</th>
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<td><strong>Molybdenum(VI) Oxide</strong></td>
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<tr>
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<tr>
<td>Grade     : &gt; 99.998%</td>
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<tr>
<td>Formula   : MoO₃</td>
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<tr>
<td>M.W.      : 143.94 g/mole</td>
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<td>Melting Point : 795 °C</td>
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<table>
<thead>
<tr>
<th>LT-E004</th>
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<tr>
<td>Formula   : CsF</td>
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<tr>
<td>M.W.      : 151.90 g/mole</td>
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<td>Melting Point : 682 °C</td>
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