Technical Data Sheet

ACS Material LumioTech™ DMAC-DPS

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1. Overview

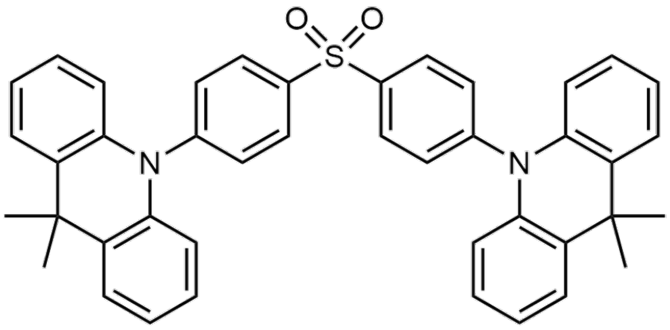
DMAC-DPS is mainly used as blue dopant material in TADF-OLED devices, due to its bipolar charge-transporting capability.

DMAC-DPS plays a key role in OLED technology, functioning in various capacities such as an emitting layer material (EML), particularly as a blue fluorescent dopant, and in TADF and PHOLED applications.

The unique molecular structure contributes to its outstanding performance in OLEDs. The compound features a diphenylsulfone core bonded with two 9,9-dimethyl-9,10-dihydroacridine acceptor groups. This configuration promotes efficient energy transfer, essential for blue light emission, with a HOMO level of 5.9 eV and a LUMO level of 2.9 eV. This optimal energy alignment positions DMAC-DPS as an excellent candidate for producing vibrant blue emissions, boosting both the efficiency and color purity of OLED displays.

2. Specifications

Product Name	DMAC- DPS
CAS no.	1477512-32-5
Chemical Formula:	$C_{42}H_{36}N_2O_2S$
Full name:	10,10′-(4,4′-Sulfonylbis(4,1-phenylene))bis(9,9-dimethyl-9,10-dihydroacridine
Molecular weight (g/mol):	632.81 g/mol
Purity:	Sublimed: > 99.0%
Physical state:	Solid
Color:	Pale-yellow
Absorption (nm):	λmax 286 (in Toluene)
Emission (nm):	λmax 469 (in Toluene)
HOMO/LUMO (eV):	HOMO = 5.9 / LUMO = 2.90
Melting Point (°C):	310



Chemical Structure of 10,10'-(4,4'-Sulfonylbis(4,1-phenylene))bis(9,9-dimethyl-9,10-dihydroacridine

3. Features

- **Enhanced Blue Emission Performance:** DMAC-DPS is known for its excellent blue emission properties, with a peak at 469 nm in Toluene. This characteristic is crucial for OLED displays that demand high color fidelity and brightness. By serving as a blue dopant, DMAC-DPS contributes to achieving deep, vivid blue hues, setting a high benchmark for display technology.

- **Versatile Application in OLED Production:** DMAC-DPS demonstrates versatility across various OLED applications, including use as a host material and in TADF technology. This adaptability makes it a valuable material for OLED production, enabling creative and effective design and fabrication techniques.

- **Advancing OLED Technology:** Our dedication to high standards in chemical manufacturing and CRO services supports the development of advanced OLED materials that enhance efficiency, performance, and sustainability.

4. Application Fields

Function in OLEDs

- Dopant material in TADF-OLED devices
- Electron injection layer
- Hole blocking layer

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