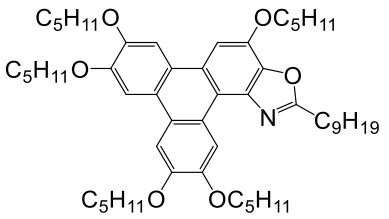
TpOx-*n*-Non

TpOx-*n*-Non is a UV excitable fluorescent material with a polycyclic aromatic donor-acceptor structure where the triphenoxazole core acts as a donor and the nonyl group on the two position of the oxazole as the acceptor group. TpOx-*n*-Non is also a photo-conducting Discotic Liquid Crystalline (DLC) material with mesophase transition onset temperature of 59°C. TpOx-*n*-Non is designed for 355 nm excitation with emission at 366 nm with quantum yield of 0.18, high thermal, chemical and photostability. TpOx-*n*-Non has potential uses in fluorescent dye staining, organic electronics and photonic applications.

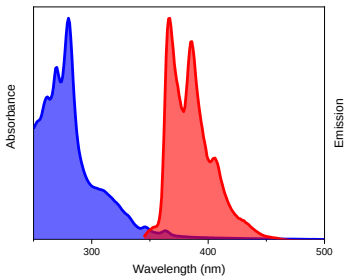
Chemical Structure



Chemical Data

- Catalogue Number: 922935
- Other Name: TpOx-*n*-Non, CT 366 11 003 01 01
- CAS #: 2377209-64-6
- Molecular Formula: $C_{53}H_{79}NO_6$
- Molecular Weight: 826.22

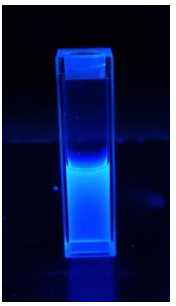
Absorbance and Emission spectra in Ethyl Acetate



Photophysical Data

- In Solvent: EtOAc
- Abs λmax (nm) = 280
- Emis λmax (nm) = 366
- pSS (nm) = 85
- ϵ (M^{-1} cm^{-1}) at Abs λmax = 160,000
- Quantum Yield (Φ) = 0.18

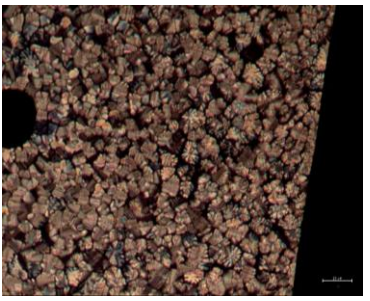
Fluorescence Emission



Material Data

- Physical State: Solid Powder
- Appearance (Colour): Pale yellow
- Polymorph crystalline phase: Solid, Discotic Liquid Crystal, Isotropic
- Solubility: THF > 1 mg/mL, MeCN < 0.37 mg/mL, DMSO < 0.03 mg/mL, DCM > 1 mg/mL

Polarising Optical Microscope Picture



Phase Transition Data

Phase transition temperature:

- Heating Crys - Col_h – 59°C, Col_h - Iso – 116°C
- Cooling Iso - Col_h – 109°C, Col_h - Crys – 40°C