Lumtec Luminescence Technology Corp.

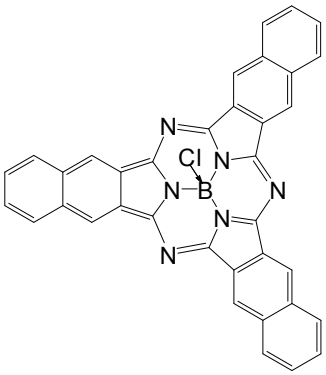
# Chloroboron (III) Subnaphthalocyanine as an Electron Donor in Bulkheterojunction Photovoltaic Cells

## Product Specifications

### LT-S947 SubNC

| | |
|---|---|
| **CAS No.** | 142710-56-3 |
| **Formula** | $C_{36}H_{18}BClN_6$ |
| **Grade** | Sublimed product |
| **Molecular Weight** | 580.83 g/mole |
| **Absorption** | 658 nm (in $CH_2Cl_2$) |
| **TGA** | > 370 °C (0.5% weight loss) |

*Reference : Nanotechnology 24 (2013) 484007*

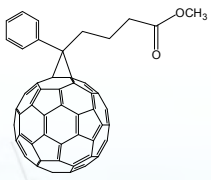


## Features

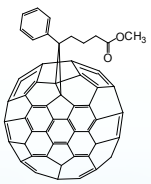
- SubNC was used as an electron donor, combined with a [6,6]-phenyl-$C_{71}$-butyric acid methyl ester ($PC_{71}BM$) or fullerene $C_{70}$ acceptor in bulk heterojunction photovoltaic cells.
- In spite of the limited solubility of SubNC in organic solvents, the solution processed device exhibited an efficiency of 4.0% under 1 sun, AM1.5G solar irradiation at room temperature, and 5.0% at 80°C due to the temperature-dependence of the carrier mobilities.
- SubNC:$C_{70}$ bulk heterojunctions were also fabricated via thermal co-evaporation, demonstrating an efficiency of 4.4%.
- The result shows that SubNC is a promising material for photovoltaic applications via various processing techniques, such as vacuum deposition and wet coating.

## Device Application

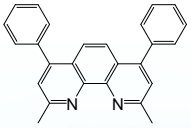
Spin-Coating OPV Device :
ITO/$MoO_3$(5 nm)/SubNC:$PC_{70}BM$(1:5, 75 nm)/BCP(6 nm)/Al
Vacuum Deposition OPV Device :
ITO/$MoO_3$(5 nm)/SubNC:$C_{70}$(1:5, 75 nm)/BCP(6 nm)/Al
Related products from Lumtec :



LT-S967 $C_{70}$



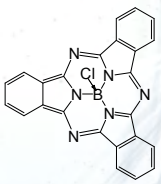
LT-S923 $PC_{71}BM$



LT-E304 BCP

**$MoO_3$**

LT-E003 $MoO_3$



LT-S943 SubPC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