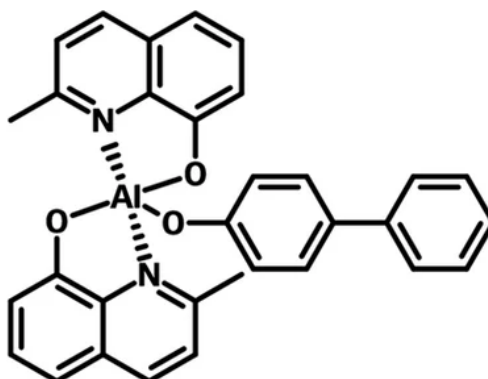




BAQ

CAS Number 146162-54-1

[MSDS](#)

Charge Transport Layer Materials, Electron Injection Layer Materials, Electron Transport Layer Materials, High Purity Sublimed Materials,
[+] [View more](#)

Quantity

1 g

Product Code **M421-1g**

In stock for priority dispatch

Price **\$360**

Estimated tariffs \$50 - \$70 per unit

Qty.

1

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BAQ, photochemically stable blue-emitting layer material in OLEDs

Used to improve the efficiency and lifetime of PHOLEDs, Sublimed $\geq 99\%$, CAS No. 146162-54-1

Bis(8-hydroxy-2-methylquinoline)-(4-phenylphenoxy)aluminum, known as BAQ or BAQ₃, is widely used as blue-emitting layer materials in organic light-emitting diodes. It is also used as hole-blocking layer or as a “barrier-softening” interfacial layer in between the electron transporting and emissive layers [1, 2, 3, 4].

BAIq is also applied as the host material and electron-transport type hole-blocking layer in red PHOLEDs, and to improve the efficiency and lifetime of PHOLEDs. As a hole-blocking material, it is known to allow for high lifetimes, up to 160,000 hours at a luminance level of 100 cd/m² [3].

BAIq has a glass transition temperature of 99 °C and is photochemically stable [5].

General Information

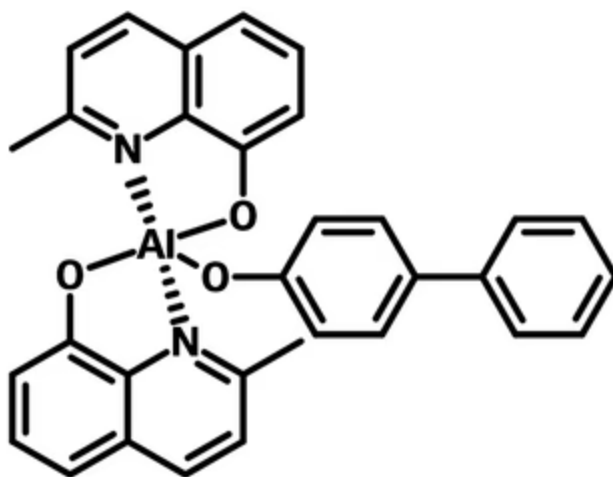
CAS number	146162-54-1
Chemical formula	C ₃₂ H ₂₅ AlN ₂ O ₃
Molecular weight	512.53 g/mol
Absorption	λ _{max} 259 nm (in THF)
Fluorescence	λ _{em} 334,477 nm (in THF)
HOMO/LUMO	HOMO = 5.9 eV, LUMO = 2.9 eV
Synonyms	• BAIq₃ • Bis(8-hydroxy-2-methylquinoline)-(4-phenylphenoxy)aluminum • Aluminum 4-biphenylolate 2-methyl-8-quinolinolate
Classification / Family	Electron transporting materials, Hole blocking materials, Light emitter layer materials, Phosphorescent host materials, Organic light-emitting diodes, Organic electronics, Sublimed materials

Product Details

Purity	≥99% (sublimed)
Melting point	Melting point/range: 207 - 214 °C (lit.)
Color	Light-yellow powder/crystals

*Sublimation is a technique used to obtain ultra pure-grade chemicals. For more details about sublimation, please refer to the [Sublimed Materials](#).

Chemical Structure



Chemical structure of BALq, CAS 146162-54-1

Device Structure(s)

Device structure	ITO (110 nm)/NPB(80 nm)/Btplr*-doped BAlq (47.5 nm)/Alq ₃ (30 nm)/Li ₂ O(0.5nm)/Al(100nm) [5]
Color	 Red
Max. EQE	8.6%
Max. Luminance	179 cd/m ²

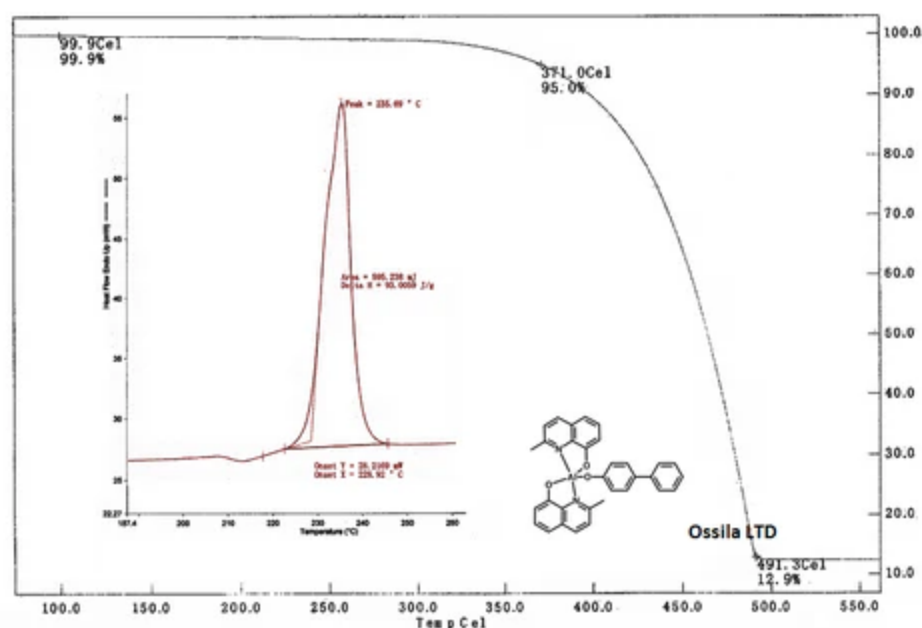
Device structure	ITO/CuPc (15 nm)/NPB (80 nm)/NPB: 0.5 wt% DCJTb (20 nm) /Alq ₃ :0.5 wt% C545T (3 nm)/MADN:0.8 wt% DSA-ph*(40 nm)/ BAlq₃ (10 nm)/LiF/Al [6]
Color	 White
Max. Luminance	45,000 cd/m ²
Max. Current Efficiency	20.8 cd/A
Max. Power Efficiency	15.9 lm W ⁻¹

Device structure	ITO/MoO _x (5 nm)/NPB (40 nm)/4% Y-Pt*:TCTA (20 nm)/8% Flrpic:mCP(10 nm)/8% Flrpic:UGH2 (10 nm)/ BAlq (40 nm)/LiF (0.5 nm)/Al (100 nm) [7]
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Color	 White
Max. EQE	16.0%
Max. Current Efficiency	45.6 cd/A
Max. Power Efficiency	35.8 lm W ⁻¹

*For chemical structure informations please refer to the cited references

Characterization (TGA and DSC)



TGA and DSC trace of Bis(8-hydroxy-2-methylquinoline)-(4-phenylphenoxy)aluminum (BALq).

MSDS Documentation



[BALq MSDS sheet](#)

Literature and Reviews

1. *Electroluminescent properties of organic light-emitting diodes using BALq and Alq3 co-evaporation layer*, Y. Iwama et al., Thin Solid Films 499, 364-368 (2006).
2. *Electroluminescent mechanism of organic light-emitting diodes with blue-emitting Alq*, T. Itoh et al., Colloids and Surfaces A: Physicochem. Eng. Aspects 284-285, 594-598 (2006).

3. A host material containing tetraphenylsilane for phosphorescent OLEDs with high efficiency and operational stability, J-W. Kang et al., Org. Electronic, 9, 452–460 (2008).

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