

New

MATERIALS



Room Temperature Phosphorescence Inducer

1H-Benzo[f]indole



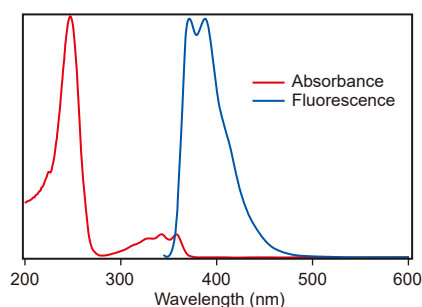
1H-Benzo[f]indole
1g
[B6283]

Advantages

- Carbazole isomer in quite small amount in petroleum-derived carbazole
- Luminescent material which induces room temperature phosphorescence (RTP) by adding a very small amount
- RTP property can be controlled by chemical modification

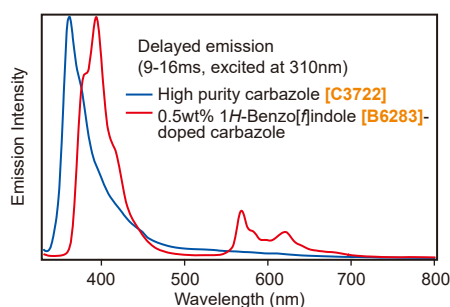
It has been reported that 1H-benzo[f]indole contained in carbazole induces room temperature phosphorescence (RTP). TCI has commercialized 1H-benzo[f]indole [B6283] as a sample for RTP research and as a synthetic raw material for RTP inducing materials.

Optical Properties of 1H-Benzo[f]indole



	$\lambda_{\text{abs}} / \text{nm}$ ($\epsilon / \text{M}^{\cdot}\text{cm}^{-1}$)	$\lambda_{\text{em}} / \text{nm}$	Stokes shift (nm)
1H-Benzo[f]indole	248 (64800), 330 (5058), 342(6200), 358 (6100)	371, 388	13
Carbazole	236 (45200), 257 (16700), 292 (19200), 321 (4322), 334 (3743)	339, 354	5

Effect of 1H-Benzo[f]indole as a RTP-inducer in Carbazole



High purity carbazole [C3722] shows no RTP.

On the other hand, RTP is induced in the region of 500 - 700nm by doping 0.5wt% 1H-benzo[f]indole [B6283] into carbazole.

References B. Liu et al., *Nat. Mater.* **2021**, 20, 175. DOI: <https://doi.org/10.1038/s41563-020-0797-2>
C. Chen, B. Liu, et al., *ACS Mater. Lett.* **2021**, 3, 1081. DOI: <https://doi.org/10.1021/acsmaterialslett.1c00138>

Related Product

RTP Inducer-free High Purity Carbazole
Carbazole (High Purity)

1g / 5g / 25g [C3722]

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