

PYRROMETHENE 597

Chemical Name: 1,3,5,7,8-pentamethyl-2,6-di-t-butylpyrromethene-difluoroborate complex

MW: 374.32

CAS Registry Number: 137829-79-9

Synonyms: PM-597

Melting Point: 255-257°C

Exciton Catalog No.: 05970

Spectral Information:

$\lambda_{\text{max,abs}} = 525\text{nm}$ (Ethanol)²⁰³
 $\epsilon_{525} = 6.8 \times 10^4 \text{ liter mol}^{-1} \text{ cm}^{-1}$ ²⁰³
 $\lambda_{\text{max,fl}} = 557\text{nm}$ (Ethanol)²⁰³
 $\Phi_f = 0.77$ (Ethanol)²⁰³

Selected Solubility Limits (25°C):

Solvent	Concentration	$\lambda_{\text{abs max}}$
Methanol	380mg/liter	523
Ethanol	1.5g/liter	525
NMP	10.1g/liter	525
EPH	7g/liter	529
PPH	9.2g/liter	528
p-Dioxane	9.8g/liter	526
Propylene Carbonate	~2.5	

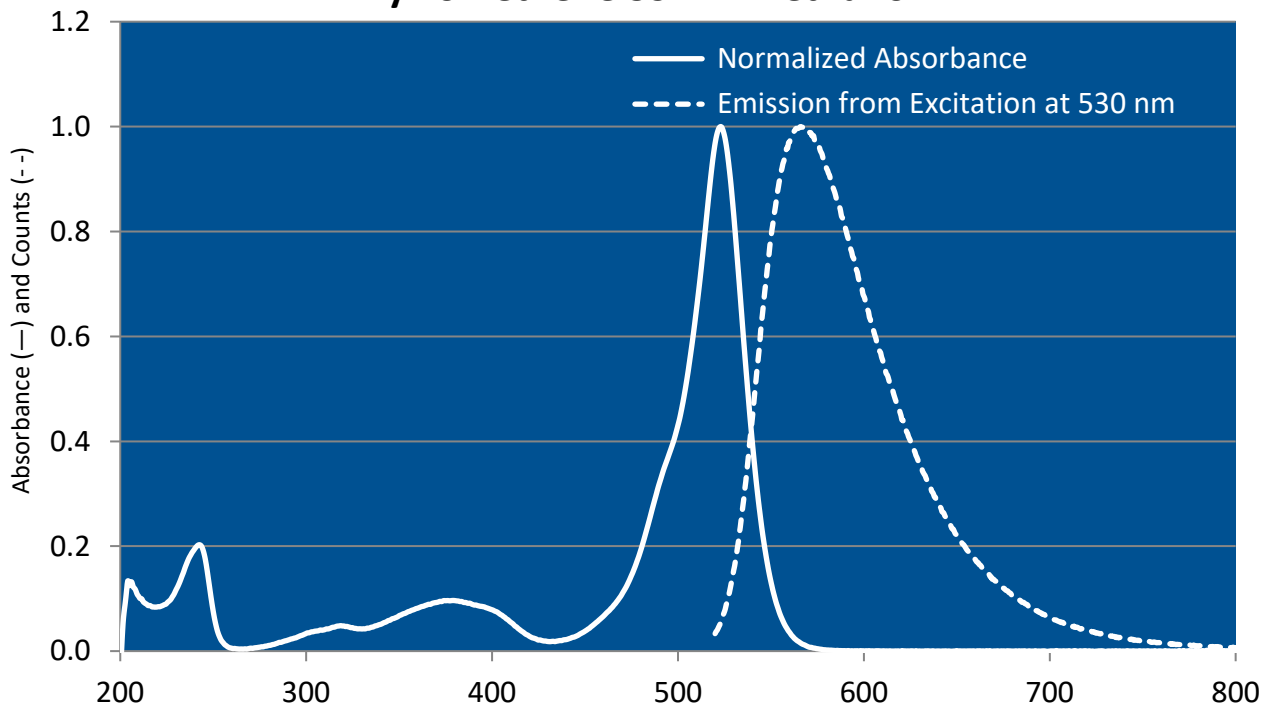
Lasing Wavelength

Max. (nm)	Range (nm)	Pump Source (nm)	Solvent	Concentration (molar)	Conversion Efficiency	Stability (1/2- life)
593(bb)		FL ²⁰³	p-Dioxane	2×10^{-4}	-	-
597(bb)		FL ²¹⁸	Ethanol	2×10^{-4}	-	-
		Nd:YAG(532) ²¹⁷	Acrylic Copolymer	3.2×10^{-4}	70% ^s	-
		Nd:YAG(532) ²²⁰	Ethanol	3×10^{-4}	82.6%	-
571	560-600+	Nd:YAG(532) ²²³	Ethanol	4.2×10^{-4} (osc), 4.5×10^{-5} (amp)	32%	255KJ/L
582	566-611	Nd:YAG(532) ²³⁹	Ethanol	4.3×10^{-4}	28%	-
585	571-612	Nd:YAG(355) ²³⁹	Ethanol	8.6×10^{-4}	12%	-
587(bb)		Nd:YAG(532) ²¹⁴	HTP	-	61% ^s	-

bb (broad band); s (slope efficiency)

EPH (2-Phenoxyethanol); HTP (High Temperature Plastic); NMP (N-Methyl-2-Pyrrolidinone); PPH (1-Phenoxy-2-Propanol)

Pyrrromethene 597 in Methanol



The information presented above is believed to be accurate but is not a specification. The customer is fully responsible for determining the suitability of this product for use in their application. Exciton, Inc. does not represent that the information is sufficient or complete for any specific application.

Quantum Yields and Lifetimes

Absorbance (nm)	Emission (nm)	Quantum Yield (max = 1.0)	Solvent	Lifetime (ns)	References, Notes
525	557	0.77	Ethanol	203	catalog reference
		0.43	Ethyl Acrylate	4.84	P-2
		0.601	COP(MMA-TMSPMA)	6.08±0.1	P-2
		0.632	COPH(MMA-TMSPMA)	6.62±0.1	P-2
		0.597	COP(HEMA-TMSPMA)	6.17±0.1	P-2
		0.626	TERP(MMA-HEMA-TMSPMA)	6.01±0.1	P-2

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For a current list of biology, biological stain, or biochemistry references for Pyromethene 597 from PubMed, click on the following link:

[Pyromethene 597](#)

NOTES:

Pyromethene 597 is offered by Exciton under U.S. Patent Nos. 4,916,711 and 5,189,029 and other worldwide patents. Use of EPH and/or PPH as a laser dye solvent is subject to U.S. Patent No. 4,896,329 (Exciton).