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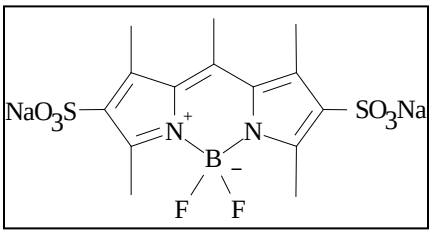
PYRROMETHENE 556



Chemical Name: Disodium-1,3,5,7,8-pentamethylpyrromethene-2,6-disulfonate-difluoroborate complex

MW: 466.19 **Melting Point:** >400°C
CAS Registry Number: 121461-69-6 **Catalog No.:** 05560
Synonyms: PMPDS-BF_2, PM-556

Spectral Information:
$\lambda_{max,abs}$ = 492nm (Methanol)[195]
ε_{492} = 7.2x10^4 liter mol^{-1} cm^{-1} [195]
$\lambda_{max,fl}$ = 533nm (Methanol)[195]
Φ_f = 0.73 (Water)[195]

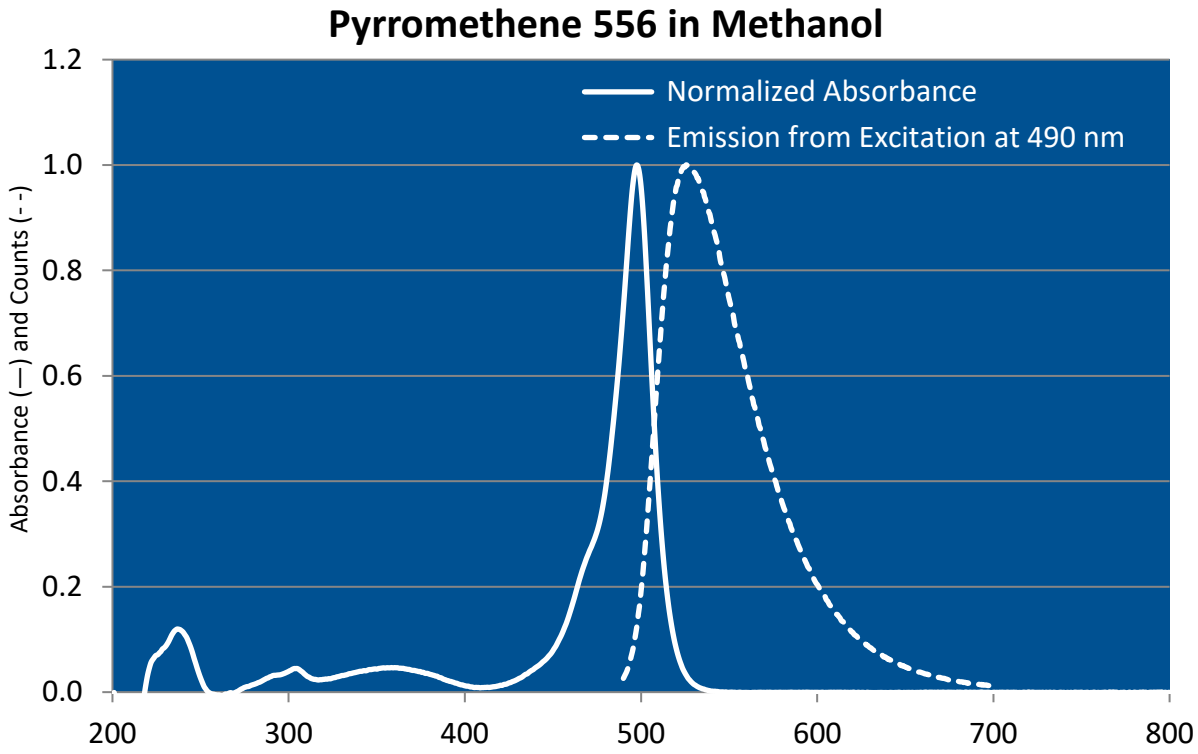
Selected Solubility Limits (25°C):

Methanol	0.74gm/liter
EG	8.1g/liter
H_20	6.4g/liter
DMF	2.3g/liter

Lasing Wavelength

Max. (nm)	Range (nm)	Pump Source (nm)	Solvent	Concentration (molar)	Conversion Efficiency	Stability (1/2- life)
548	537-605	FL(Triaxial)[193]	Methanol	2.5x10^{-4}	28.9%^{s}	-
555	(545-585)*	FL(Coaxial)[194]	DMA/MeOH,1/10	2x10^{-4}	31%	“very long”
561	540-580	FL[195,197]	Methanol	7x10^{-5}	-	-
553	530-624	Ar(458-514)[212]	EG	2x10^{-3}	45%	300Wh
546	527-583	Ar(488)[222]	EG	4.3x10^{-3}	37%	-
550	527-584	Ar(514.5)[222]	EG	7.5x10^{-3}	35%	-
547	523-582	Ar(699-1,488)[224]	EG	4.3x10^{-3}	12.2%	-

*(FWHM); s (slope efficiency)
DMA (N,N-Dimethylacetamide); DMF (N,N-Dimethylformamide); EG (Ethylene Glycol); MeOH (Methanol)



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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
492	533		Methanol		195

REFERENCES:

193. Characterization of Pyrromethene-BF_2 Complexes as Laser Dyes, W.E. Davenport, J.J. Ehrlich, and S.E. Neister, P*roceedings of the International Conferences on Lasers '89*, New Orleans LA, 408 (1989). [Phase-R 1200 Laser System]

194. S.E. Neister, private communication. [Phase-R Laser System]

195. Pyrromethene-BF_2 Complexes as Laser Dyes: 1, M. Shah, K. Thangaraj, M.-L. Soong, L.T. Wolford, J.H. Boyer, I.R. Politzer, and T.G. Pavlopoulos, *Heteroatom Chem*., 1(5), 389 (1990). [Non-commercial Dye Laser-details in paper]

196. Efficient Laser Action from 1,3,5,7,8-Pentamethylpyrromethene-BF_2 Complex and its Disodium 2,6-Disulfonate Derivative, T.G. Pavlopoulos, M. Shah, and J.H. Boyer, *Optics Commun*., 70(5), 425 (1989). [Non-commercial Dye Laser-details in paper]

197. J. Hsia, Candela Laser Corporation, private commun., 1989. [Candela Model LFDL-8 and High Power LFDL]

212. Efficient Laser Action from two cw Laser-Pumped Pyrromethene-BF_2 Complexes, S.G. Guggenheimer, J.H. Boyer, K. Thangaraj, M. Shah, M.-L Soong, and T.G. Pavlopoulos, *Appl. Optics*, 32(21), 3942(1993). [Spectra-Physics Model 375B Dye Laser]

222. M. Benson, Coherent Laser Group, private commun., 1994. Results were obtained using R560 optics. [Coherent Model 899-29]

224. M.M. Mickelson, private commun., 1993. Pumping with 6 watts (488nm) produced 0.72 watts output centered at 547nm.

For a current list of biology, biological stain, or biochemistry references for Pyrromethene 556 from PubMed, click on the following link:

Pyrromethene 556

NOTES:

Pyrromethene 556 composition appears in US Patents 4,916,711 and 5,189,029 and other worldwide patents.

Use in Cancer Research: Use of Substituted Pentamethylpyrromethene Boron Difluoride Complexes in Photodynamic Therapy, L.R. Morgan, J.H. Boyer, L.E. Gillen, M.P. Shah, C.M. Lau, A. Natesh, and K. Thangaraj, *Proceedings of the Eightieth Annual Meeting of the AACR*, 30, 1989.