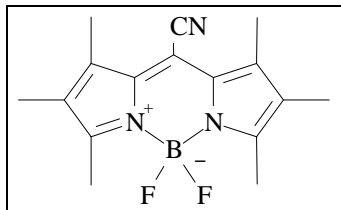




PO Box 31126
Dayton, OH 45437
Tel: 937.252.2989 Fax: 937.258.3937
E-mail: info@exciton.com
www.exciton.com

PYRROMETHENE 650



Chemical Name: 1,2,3,5,6,7-hexamethyl-8-cyanopyromethene-difluoroborate complex
MW: 301.15
CAS Registry Number: 157410-23-6
Synonyms: PM-HMC

Melting Point: 255-258°C (decomposes)
Exciton Catalog No.: 06505

Spectral Information:

$\lambda_{\text{max,abs}} = 588\text{nm}$ (Ethanol)²²⁰
 $\epsilon_{588} = 4.6 \times 10^4 \text{ liter mol}^{-1} \text{ cm}^{-1}$ ²²⁰
 $\lambda_{\text{max,fl}} = 612\text{nm}$ (Ethanol)²²⁰
 $\Phi_f = 0.54$ ²²⁰

Selected Solubility Limits (25°C):

Solvent	Concentration	$\lambda_{\text{abs max}}$
Methanol	~280mg/liter	587
Ethanol	~460mg/liter	588
EPH	~4.3g/liter	598.6
PPH	~4.4g/liter	596.6
p-Dioxane	~8.9g/liter	589.4
Propylene Carbonate	~3g/liter	
Ethylene Glycol	insoluble	
p-Dioxane	~8.9g/liter	
Propylene Glycol	~3g/liter	

REPORTED LASER PERFORMANCE DATA

Lasing Wavelength Max. (nm)	Range (nm)	Pump Source (nm)	Solvent	Concentration (molar)	Conversion Efficiency	Stability (1/2- life)
624(bb)		Nd:YAG(532) ²¹⁴	HTP**	1.3×10^{-4}	57% ^s	-
631(bb)		Nd:YAG(532) ²²⁰	Xylene*	2×10^{-4}	31% ^s	-
612	604-630	Nd:YAG(532) ²²⁶	EtOH/PPH:8/2 PM650/R590:8/2	-	-	-

bb (broad band); s (slope efficiency)

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

* **If you received this data sheet prior to 01/26/96, the solvent previously listed as ethanol was incorrect.**

** Solid state dye laser

REFERENCES:

214. Laser Performance and Material Properties of a High Temperature Plastic Doped with Pyromethene-BF₂ Dyes, T.H. Allik, S. Chandra, T.R. Robinson, J.A. Hutchinson, G. Sathyamoorthi, and J.H. Boyer, *Mat. Res. Soc. Symp. Proc.*, 329, 291 (1994). [Non-Commerical Dye Laser - details in paper]
220. Spectroscopy and Laser Performance of New BF₂-Complex Dyes in Solution, T.H. Allik, R.E. Hermes, G. Sathyamoorthi, and J.H. Boyer, *SPIE Proceedings: Visible and UV Lasers*, 2115, 240 (1994). [Non-Commerical Dye Laser - details in paper]
226. D. Richter, private commun., 1994. Pumped with Continuum Nd:YAG 800mj, 300Hz to give 1 watt output centered at 612.5nm (not optimized).

For a current list of biology, biological stain, or biochemistry references for Pyromethene 650 from PubMed, click on the following link:

[Pyromethene 650](#)

NOTES:

Pyromethene 650 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).