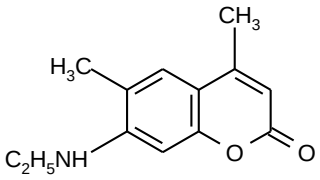
2150 Bixby Road
Lockbourne, OH 43137
Tel: 614.492.5610
E-mail: info.exciton@luxotticaretail.com
www.exciton.luxottica.com

COUMARIN 450

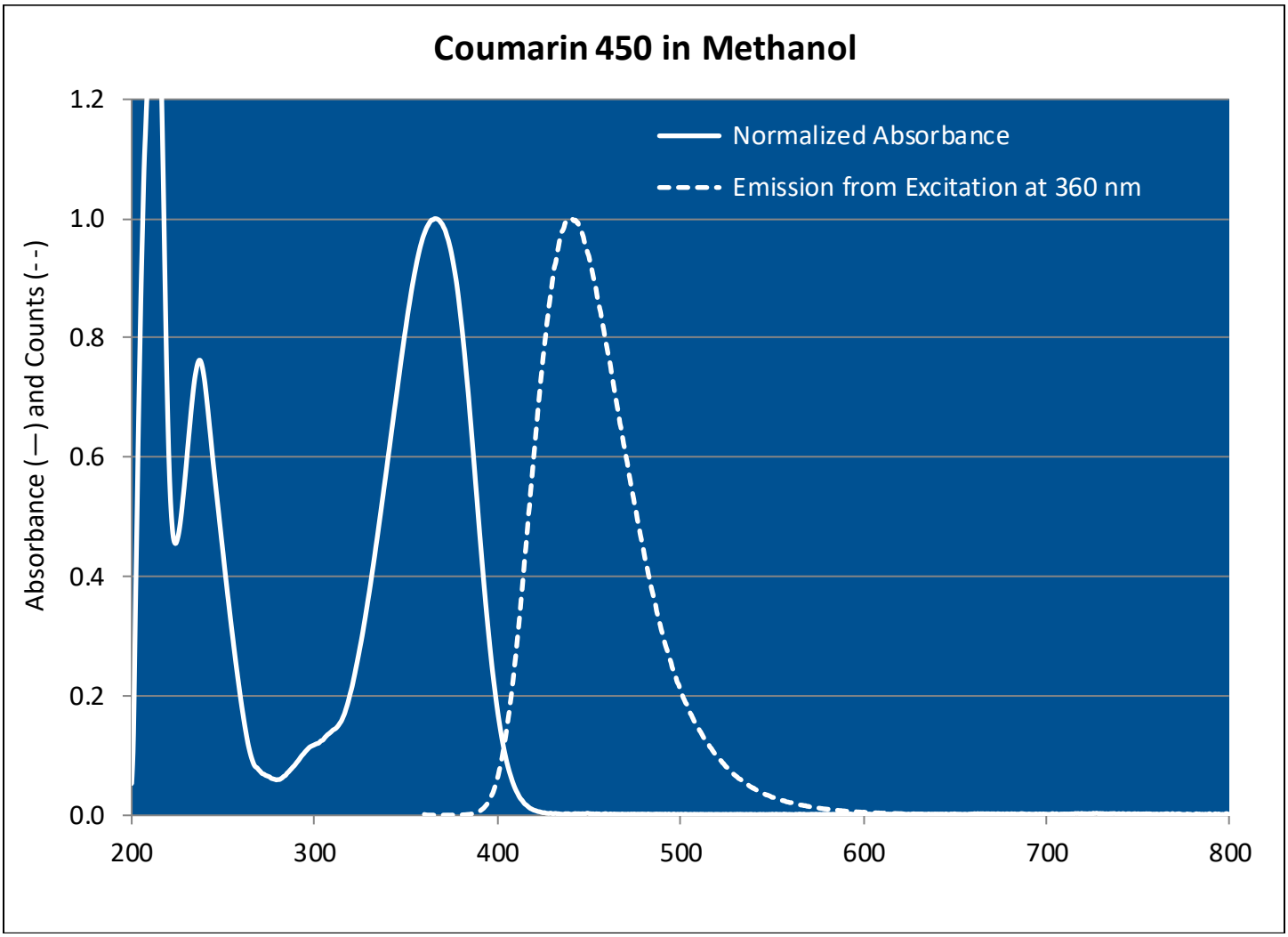
Synonym: 7-(ethylamino)-4,6-dimethyl-2H,-1-benzopyran-2-one; Coumarin 2
Catalog No.: 04500
CAS No.: 26078-25-1
Chemical Formula: $C_{13}H_{15}NO_2$ **MW:** 217
Appearance: Pale yellow crystalline powder
Structure:



Lasing Wavelength Max. (nm)	Range (nm)	Pump Source (nm)	Solvent	Concentration (molar)	Abs λ-max	Fl λ-max
446	435[e]	FL[16]	Ethanol		366[e]	
449	435-470	FL[3]	Ethanol/1.5% LO	1×10^{-4}		
450	427-488	FL[11]	Methanol	2×10^{-4}		
455	435-480	FL[69]	MeOH/H_2O	8×10^{-5}		
458	432-480	FL[69]	Methanol	6×10^{-5}		
460	445-482	FL[12]	MeOH/H_2O,4/6	1.7×10^{-4}		
451	425-482	XeCl(308)[204]	Methanol	6×10^{-3}(osc), 4×10^{-3}(amp)		
451	430-482	XeCl(308)[114]	Methanol	7.4×10^{-3}		
451	434-474	XeCl(308)[110]	Methanol	2×10^{-3}		
444	432-458	XeF(351)[154]	Ethanol	5×10^{-3}		
448	434-463	Nd:YAG(355)[239]	Ethanol	9.2×10^{-4}		
452	436-467	Nd:YAG(355)[110]	Methanol	3×10^{-4}		
454		Nd:YAG(355)[59]	Methanol	7×10^{-4}		
455	-433-474-	Nd:YAG(355)[53]	Methanol			
458	435-463	Nd:YAG(355)[109]	Ethanol	1×10^{-3}		
446	428-465	N_2(337)[5]	Ethanol	1×10^{-2}		
450	435-485	Ar or Kr(uv)[17]	EG	3×10^{-3}		
452	430-492	Ar(cw)[14]	EG			
453	430-482	Ar or Kr[68]	BzOH/EG,1/7.5	80% pump absorption		
460	430-480	Ar(351/364)[13]	20%aq.DPA	2×10^{-3}		

LO=Ammonyx LO, MeOH/H_2O=methanol/water, EG=ehtylene glycol, BzOH=benzyl alcohol, DPA=N, N-dipropylacetamide, e=ethanol

2150 Bixby Road
Lockbourne, OH 43137
Tel: 614.492.5610
E-mail: info.exciton@luxotticaretail.com
www.exciton.luxottica.com



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
354	420	0.8	Acetonitrile	3.5	C-2b
367	441	0.9	50% ethanol	4	C-2b
366		0.8	Ethanol		C-5

2150 Bixby Road
Lockbourne, OH 43137
Tel: 614.492.5610
E-mail: info.exciton@luxotticaretail.com
www.exciton.luxottica.com

REFERENCES:

3. Phase-R Corporation, Box G-2 Old Bay Rd., New Durham, NH 03855

5. Laser Photonics, Inc., 12351 Research Parkway, Orlando, FL 32826, formerly, Molectron Corporation and Cooper LaserSonics, Inc.

11. Lasing Characteristics of Seventeen Visible-Wavelength Dyes using a Coaxial-Flashlamp-Pumped Laser, J.B. Marling, J.H. Hawley, E.M. Liston and W.B. Grant, *Appl. Optics*, 13(10), 2317 (1974). **a**. With Rhodamine 6G

12. Chromatix, 560 Oak Meade Parkway, Sunnyvale, CA 94086

13. CW Laser Emission from Coumarin Dyes in the Blue and Green, S.A. Tuccio, K.H. Drexhage and G.A. Reynolds, *Optics Commun*., 7(3), 248 (1973)

14. CW Laser Emission Spanning the Visible Spectrum, J.M. Yarborough, *Appl. Phys. Lett.*, 24(12), 629 (1974). **a**. With Rhodamine 6G

16. New Materials for Flash-Pumped Organic Lasers, R. Srinivasan, *IEEE J. Quantrum Electron*., QE5, 552 (1969)

17. Spectra-Physics, 1250 W. Middlefield Road, Mountain View, CA 94039

53. Continuum, 3150 Central Expressway, Santa Clara, CA 95051, formerly, Quantel International

59. 3547-Å Pumped High-Power Dye Laser in the Blue and Violet, K. Kato, *IEEE J. Quantum Electron.*, QE11, 373 (1975)

68. Coherent Inc., 3210 Porter Dr., Palo Alto, CA 94304

69. Candela Laser Corporation, 530 Boston Post Road, Wayland, MA 01778-1833

109. Tuning Ranges of 355 nm Pumped Dyes from 410-715 nm, D.M. Guthals and J.W. Nibler, *Optics Commun*., 29(3), 322 (1979)

114. Optimization of Spectral Coverage in an Eight-Cell Oscillator-Amplifier Dye Laser Pumped at 308nm, F. Bos, *Appl. Optics*, 20, 3553 (1981)

154. Dye Laser Radiation in the 370-760nm Region Pumped by a XeF Excimer Laser, T.C. Eschrich and T.J. Morgan, *Applied Optics*, 24(7), 937 (1985)

204. Questek, Inc., 44 Manning Road, Billerica, MA 01821 (Tuning Curves for Model 5200B Dye Laser, PDL-3)

239. P. Jauernik, private commun., Sirah Laser- und Plasmatechnik, 2003.

C-2. Solvent Effects on Emission Yield and Lifetime for Coumarin Laser Dyes, Requirements for a Rotatory Decay Mechanism, Guilford Jones II, W.R. Jackson, C-Y. Choi and W.R. Bergmark, J. Phys. Chem. 89(2), 294-300 (1985); https://doi.org/10.1021/j100248a024 **Note B:** Air-saturated solution @ room temperature.

C-5. Laser Dye Stability. Part 5, Effect of Chemical Substituents of Bicyclic Dyes Upon Photodegradation Parameters, A.N. Fletcher and D.E. Bliss, Appl. Phys. 16, 289 (1978), https://doi.org/10.1007/BF00885124

For a current list of biology, biological stain, or biochemistry references for Coumarin 450 from PubMed, click on the following link:

Coumarin 450 or Coumarin 2