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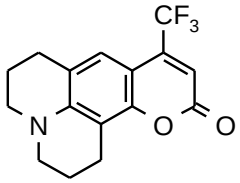
COUMARIN 540A

Synonym: 2,3,6,7-tetrahydro-9-(trifluoromethyl)-1H,5H,11H-[1]benzopyrano[6,7,8-ij]quinolizin-11-one; Coumarin 153
Catalog No.: 05450
CAS No.: 53518-18-6 **MW:** 309.29
Chemical Formula: $C_{16}H_{14}F_3NO_2$
Appearance: Bright yellow crystals
Structure:



Lasing Wavelength

Max. (nm)	Range (nm)	Pump Source (nm)	Solvent	Concentration (molar)	Abs λ-max	Fl λ-max
536	517-576	FL[3]	Ethanol	1 x 10^{-4}	423[e]	530[e]
538		FL[21]	Ethanol		455[c82]	
541	520-586	FL[3]	Methanol	1 x 10^{-4}		500[y]
543		FL[23]	Ethanol			521[n]
537	513-588	XeCl(308)[118]	Ethanol	4 x 10^{-3}(osc)		531[e]
542	516-608 542[e/w]	XeCl(308)[204]	Methanol	9 x 10^{-3}(osc), 9 x 10^{-3}(amp)		547[g]
544	517-612	XeCl(308)[114]	Methanol	8 x 10^{-3}		
545	522-592	XeCl(308)[110]	Methanol	3 x 10^{-3}		
550	521-605	XeCl(308)[110]	Methanol	2 x 10^{-3}		
540	516-594	XeF(351)[154]	Ethanol	1 x 10^{-2}		
540	516-590	Nd:YAG(355)[53]	Methanol			
543	523-586	Nd:YAG(355)[110]	Methanol	3.5 x 10^{-3}		
500	470-550	N_2(337)[183]	p-Dioxane	8.9 x 10^{-3}		
504	-485-530-	N_2(337)	p-Dioxane			
505	480-560	N_2(337)[183]	p-Dioxane	55mg/20ml		
506	479-555	N_2(337)[114]	p-Dioxane	1.3 x 10^{-3}		
507		N_2(337)[48]	p-Dioxane			
536	515-583	N_2(337)[5]	Ethanol	1 x 10^{-2}		
542	508-627	N_2(337)[90]	Ethanol	1 x 10^{-2}		
545	512-598	N_2(337)[114]	Ethanol	1.5 x 10^{-3}		
562	520-575	Ar(476)[51]	EG/BzOH,11/1	4 x 10^{-3}		

c = cyclohexane; e = ethanol; e/w = ethanol/water; g = glycerol; n = acetonitrile; y = ethyl acetate

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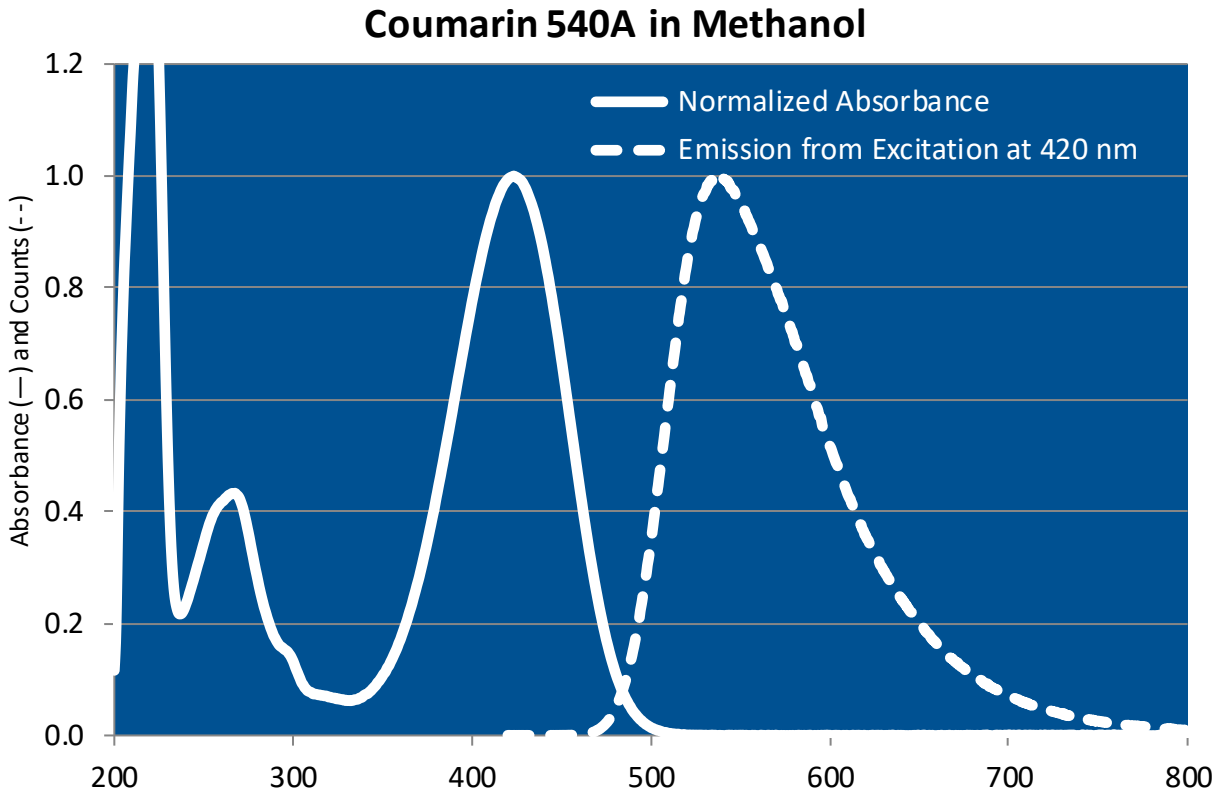

The information presented above is believed to be accurate but is not a specification. The customer is fully responsible for determining the suitability of this product for use in their application. Exciton, Inc. does not represent that the information is sufficient or complete for any specific application.

Quantum Yields and Lifetimes

Absorbance (nm)	Emission (nm)	Quantum Yield (max = 1.0)	Solvent	Lifetime (ns)	References, Notes
396	455	0.9	Cyclohexane	4.3	C-2a
	455	0.73	Cyclohexane	4.3	C-4
409	501	0.93	Ethyl Acetate	5.4	C-2a
	500	0.88	Ethyl Acetate	5.4	C-4
418	521	0.56	Acetonitrile	5.6	C-2a
	521	0.43	Acetonitrile	5.6	C-4
421	531	0.38	Ethanol	3.4	C-2a
	531	0.26	Ethanol	3.4	C-4
422		0.53	Ethanol		C-5
423	531	0.45	Ethanol		C-7c
			Lifetime corresponds to dominant single-exponential decay.		
423	531	0.58	Ethanol		C-7a
423	531	0.61	Ethanol		C-7b
	485-635	0.544	Ethanol		S-4
425	542	0.38	50% ethanol	4.7	C-2a
	542	0.26	Ethanol/Water (50:50)	4.7	C-4
430	549	0.12	Water	---	C-2a
434	546	0.22	Glycerol	3.5	C-2a
	547	0.17	Glycerol	3.5	C-4
422		0.41	Methanol		C-5

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C-7a. The Effect of Oxygen on the Fluorescence Quantum Yields of Some Coumarin Dyes in Ethanol, R.F. Kubin and A.N. Fletcher, Chem. Phys. Lett. 99(1), 49 (1983), https://doi.org/10.1016/0009-2614(83)80268-1 **Note A:** Under air.

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C-7b. The Effect of Oxygen on the Fluorescence Quantum Yields of Some Coumarin Dyes in Ethanol, R.F. Kubin and A.N. Fletcher, Chem. Phys. Lett. 99(1), 49 (1983), https://doi.org/10.1016/0009-2614(83)80268-1 **Note B:** Under argon

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For a current list of biology, biological stain, or biochemistry references for Coumarin 540A from PubMed, click on the following link:

Coumarin 540A or Coumarin 153