



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

## COUMARIN 540

**Synonym:** 3-(2-benzothiazolyl)-7-(diethylamino)-2H-1-benzopyran-2-one; Coumarin 6

**Catalog No.:** 05400

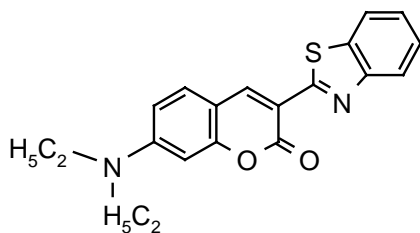
**CAS No.:** 38215-36-0

**MW:** 350.44

**Chemical Formula:** C<sub>20</sub>H<sub>18</sub>N<sub>2</sub>O<sub>2</sub>S

**Appearance:** Orange crystals

**Structure:**



Max. Lasing Wavelength (nm)	Range (nm)	Pump Source (nm)	Solvent	Concentration (molar)	Abs $\lambda$ -max	FI $\lambda$ -max
531	510-556	FL <sup>3</sup>	Methanol	1 x 10 <sup>-4</sup>	460 <sup>e</sup>	505 <sup>e</sup>
538	516-562	FL <sup>11</sup>	Methanol	2 x 10 <sup>-4</sup>		
542	514-564	FL <sup>69</sup>	Methanol	6 x 10 <sup>-5</sup>		
528		XeCl(308) <sup>112</sup>	Ethanol	saturated		
544	525-575	Nd:YAG(355, m-l, QS, 100ps) <sup>169</sup>	Methanol	9.9 x 10 <sup>-3</sup>		
535	508-546	Ar(488) <sup>123</sup>	G/BzOH/MeOH, 5/1/3+COT			
538	521-551	Ar(458, 514) <sup>17</sup>	EG	1.25 x 10 <sup>-3</sup>		
540	515-566	Ar(cw) <sup>14</sup>	EG			
540	515-585	Ar(488) <sup>13</sup>	20%aq.DPA+LO, COT			
544	515-585	Ar(488) <sup>68</sup>	BzOH/G, 11/2			
546	515-588	Ar(488) <sup>206</sup>	EG/BzOH, 6/2	7.14 x 10 <sup>-3*</sup>		
560	510-570-	Ar(488) <sup>51</sup>	EG/BzOH	1.8 x 10 <sup>-3</sup>		
	507-529	N <sub>2</sub> -He(428) <sup>49</sup>	Ethanol	1 x 10 <sup>-2</sup>		

\* This represents a maximum value. Concentration should be adjusted to 80-85% absorption of the pump light.

BzOH=benzyl alcohol, COT=cyclooctatetraene, DPA=N,N-dipropylacetamide, e=ethanol, EG=ethylene glycol, G=glycerol, LO=Ammonyx LO, MeOH=methanol



PO Box 31126  
Dayton, OH 45437  
Tel: 937.252.2989 Fax: 937.258.3937  
E-mail: [info@exciton.com](mailto:info@exciton.com)  
[www.exciton.com](http://www.exciton.com)

## COUMARIN 540

### REFERENCES:

3. Phase-R Corporation, Box G-2 Old Bay Rd., New Durham, NH 03855
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
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
17. Spectra-Physics, 1250 W. Middlefield Road, Mountain View, CA 94039
49. Dyes Pumped by the Nitrogen Ion Laser, C.B. Collins, K.N. Taylor, and F.W. Lee, *Optics Commun.*, 26(1), 101 (1978)
51. J. Blazy, private commun., 1978
68. Coherent Inc., 3210 Porter Dr., Palo Alto, CA 94304
69. Candela Laser Corporation, 530 Boston Post Road, Wayland, MA 01778-1833
112. Efficient Dye Lasers Pumped by an XeCl Excimer Laser, O. Uchino, T. Mizunami, M. Maeda and Y. Miyazoe, *Appl. Phys.*, 19, 35 (1979)
123. Powerful Single-Frequency Ring Dye Laser Spanning the Visible Spectrum, T.F. Johnston, Jr., R.H. Brady and W. Proffitt, *Appl. Optics*, 21(13), 2307 (1982)
123. Powerful Single-Frequency Ring Dye Laser Spanning the Visible Spectrum, T.F. Johnston, Jr., R.H. Brady and W. Proffitt, *Appl. Optics*, 21(13), 2307 (1982)
169. A High Power Synchronously Pumped Dye Laser Operating in the Blue and Green Spectral Region, K.A. Ure, D.C. Hanna and D.J. Pointer, *Optics Commun.*, 60(4), 229 (1986)
206. Coherent Inc., 3210 Porter Dr., Palo Alto, CA 94304; (599 Composite Tuning Curves, 1992; The concentration shown represents a maximum value. The final concentration should be adjusted to obtain 80-85% absorption of the pump light)

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

[Coumarin 540 or Coumarin 6](#)