



Fluorescent Labels and Dyes

ATTO-TEC offers a new generation of patented fluorescent markers. They are designed to meet the requirements for molecular labels in the area of life sciences. ATTO-dyes can be applied as fluorescent labels for a large variety of bio-molecules, i.e. proteins, oligonucleotides etc. The dyes are highly suitable for high-resolution microscopy, like STED, STORM, SIM etc., as well as single-molecule detection applications.

ATTO-dyes stand out for their reactivity, purity, brightness, and in particular their photostability. The dyes are available in a large number of modifications, e.g. with free carboxylic acid group, as N-hydroxysuccinimidyl(NHS)-esters, maleimides, amines, azides, alkynes, iodoacetamides, tetrazines as well as conjugated to phalloidin, streptavidin, biotin, and various glycerophospholipids. For detailed information on all products and derivatives please visit www.atto-tec.com.

Label	λ_{abs} , nm	ϵ_{max} , M ⁻¹ cm ⁻¹	λ_{fl} , nm	η_{fl} , %	τ_{fl} , ns	Δq	CF ₂₆₀	CF ₂₈₀	MW, g/mol (NHS-ester)	MW, g/mol (Maleimide)
ATTO 343H <i>new</i>	343	19000	441	90	4.8	-1	0.20	0.19	638	
ATTO 386H <i>new</i>	386	25000	472	90	5.0	-1	0.47	0.10	650	
ATTO 390	390	24000	467	90	3.6	0	0.46	0.09	440	466
ATTO 425	439	45000	485	90	3.6	0	0.19	0.17	499	524
ATTO 436H <i>new</i>	436	45000	483	90	3.5	-1	0.21	0.16	708	
ATTO 430LS	436	32000	545	65	4.0	-1	0.32	0.22	686	711
ATTO 465	453	75000	506	75	5.0	+1	1.09	0.48	493	518
ATTO 488	500	90000	520	80	4.1	-1	0.22	0.09	981	1067
ATTO 490LS	495	45000	658	30	2.6	-1	0.39	0.21	793	818
ATTO 495	498	80000	526	20	1.0	+1	0.45	0.37	549	574
ATTO Rho110	507	100000	531	80	4.1	+1	0.21	0.14	627	652
ATTO 514	511	115000	532	85	3.9	-1	0.21	0.07	1111	990
ATTO 520	517	110000	538	90	3.6	+1	0.16	0.20	564	589
ATTO 532	533	115000	557	90	3.8	-1	0.20	0.09	1081	1063
ATTO Rho6G	535	115000	560	90	4.1	+1	0.19	0.16	711	750
ATTO 540Q	543	105000				+1	0.27	0.26	756	781
ATTO 542	542	120000	562	93	3.7	-3	0.18	0.08	1125	1150
ATTO 550	554	120000	576	80	3.6	+1	0.23	0.10	791	816
ATTO 553H <i>new</i>	553	120000	575	85	3.6	-1	0.29	0.13	980	
ATTO 565	564	120000	590	90	4.0	0	0.27	0.12	708	733
ATTO Rho3B	566	120000	589	50	1.5	+1	0.27	0.13	739	764
ATTO Rho11	572	120000	595	80	4.0	+1	0.26	0.10	763	788
ATTP 576H <i>new</i>	576	120000	576	95	4.0	-1	0.26	0.09	1036	
ATTO Rho12	577	120000	600	80	4.0	+1	0.26	0.09	847	872
ATTO 584H <i>new</i>	584	120000	598	85	4.0	-1	0.29	0.39	976	
ATTO Thio12	582	110000	607	15	2.0	+1	0.11	0.37	699	724
ATTO 575Q	582	120000				+1	0.29	0.12	808	833
ATTO 580Q	587	110000				+1	0.32	0.11	892	917
ATTO Rho101	587	120000	609	80	4.2	+1	0.18	0.17	787	812
ATTO 589H <i>new</i>	589	120000	620	85	3.9	-1	0.31	0.55	1106	
ATTO 590	593	120000	622	80	3.7	0	0.39	0.43	788	813
ATTO Rho13	603	120000	627	80	3.9	+1	0.28	0.43	843	868
ATTO 594	603	120000	626	85	3.9	-1	0.22	0.50	1389	1358
ATTO 610	616	150000	633	70	3.2	+1	0.03	0.06	588	613
ATTO 614H <i>new</i>	614	140000	632	80	3.9	-2	0.22	0.47	1258	
ATTO 612Q	615	115000				+1	0.35	0.60	888	913
ATTO 620	620	120000	642	50	2.9	+1	0.04	0.06	709	734
ATTO Rho14	626	140000	646	80	3.7	+1	0.26	0.47	981	1006
ATTO 633	630	130000	651	64	3.3	+1	0.04	0.05	749	774
ATTO 643	643	150000	665	62	3.5	-1	0.05	0.04	955	1072
ATTO 647	647	120000	667	20	2.4	0	0.08	0.04	811	829
ATTO 647N	646	150000	664	65	3.5	+1	0.04	0.03	843	868
ATTO 655	663	125000	680	30	1.8	0	0.24	0.08	887	812
ATTO Oxa12	662	125000	681	30	1.8	+1	0.32	0.12	835	875
ATTO 665	662	160000	680	60	2.9	+1	0.07	0.06	820	845
ATTO 678H <i>new</i>	678	150000	708	20	1.5	-1	0.17	0.08	1058	
ATTO 680	681	125000	698	30	1.7	0	0.30	0.17	828	1024
ATTO 700	700	120000	716	25	1.6	0	0.26	0.41	837	971
ATTO 725	728	120000	751	10	0.5	+1	0.08	0.06	613	638
ATTO 740	743	120000	763	10	0.6	+1	0.07	0.07	665	690
ATTO MB2	668	100000				+1	0.08	0.24	553	591

λ_{abs} longest-wavelength absorption maximum
 ϵ_{max} molar decadic extinction coefficient at the longest-wavelength absorption maximum
 λ_{fl} fluorescence maximum
 η_{fl} fluorescence quantum yield
 τ_{fl} fluorescence decay time
 Δq change of electrical charge on conjugation with ATTO-dyes

CF₂₆₀ CF₂₆₀ = $\epsilon_{260}/\epsilon_{\text{max}}$. Correction factor used in calculation of degree of labeling (DOL) in case of dye-DNA conjugates.
 CF₂₈₀ CF₂₈₀ = $\epsilon_{280}/\epsilon_{\text{max}}$. Correction factor used in calculation of degree of labeling (DOL) in case of dye-protein conjugates.
 MW molecular weight

Solvent:
Phosphate Buffered Saline (PBS), pH 7.4

All absorption and emission spectra are available in digitized form (ASCII-file) on www.atto-tec.com under "Spectra", at each individual dye description.



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