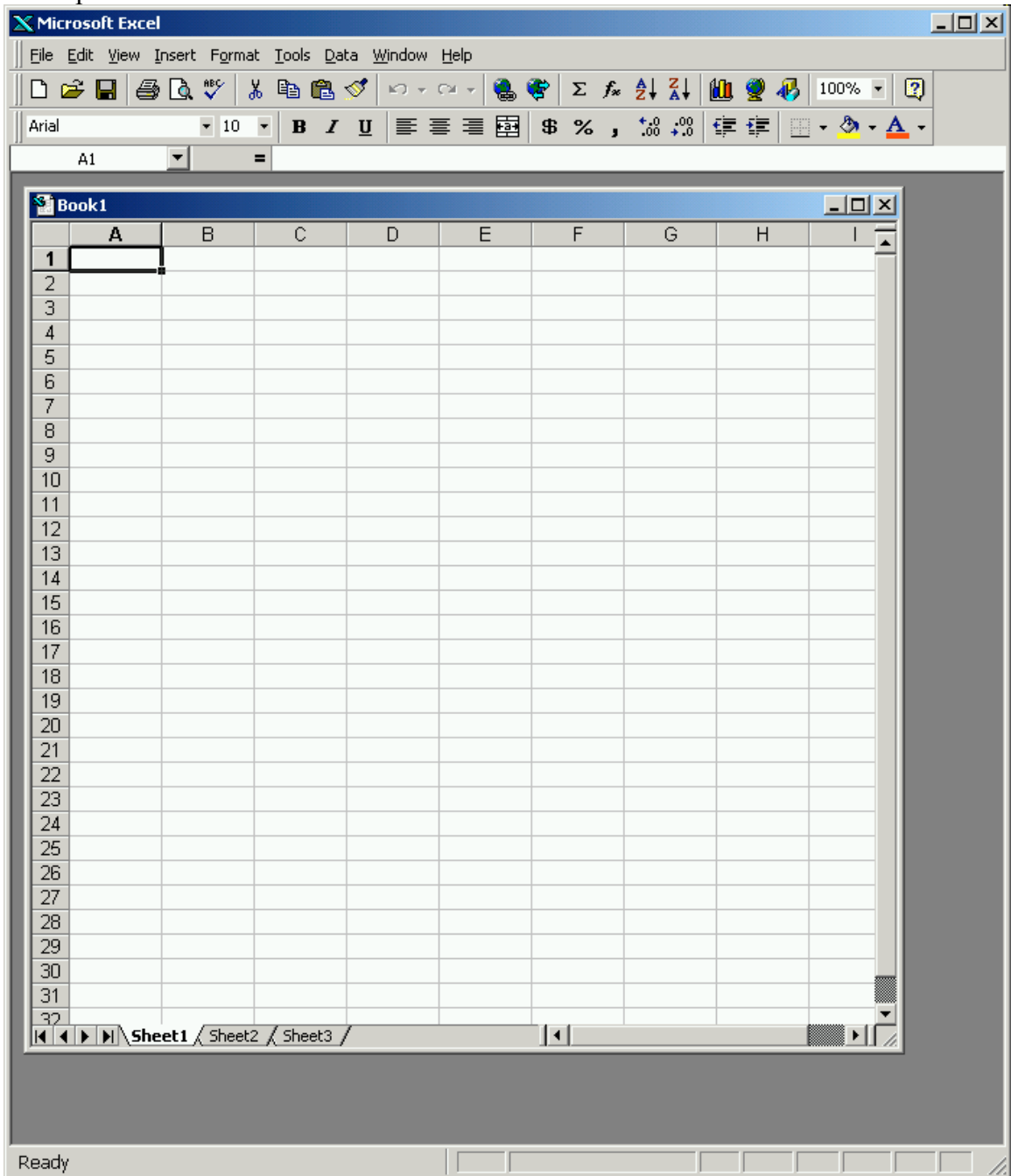
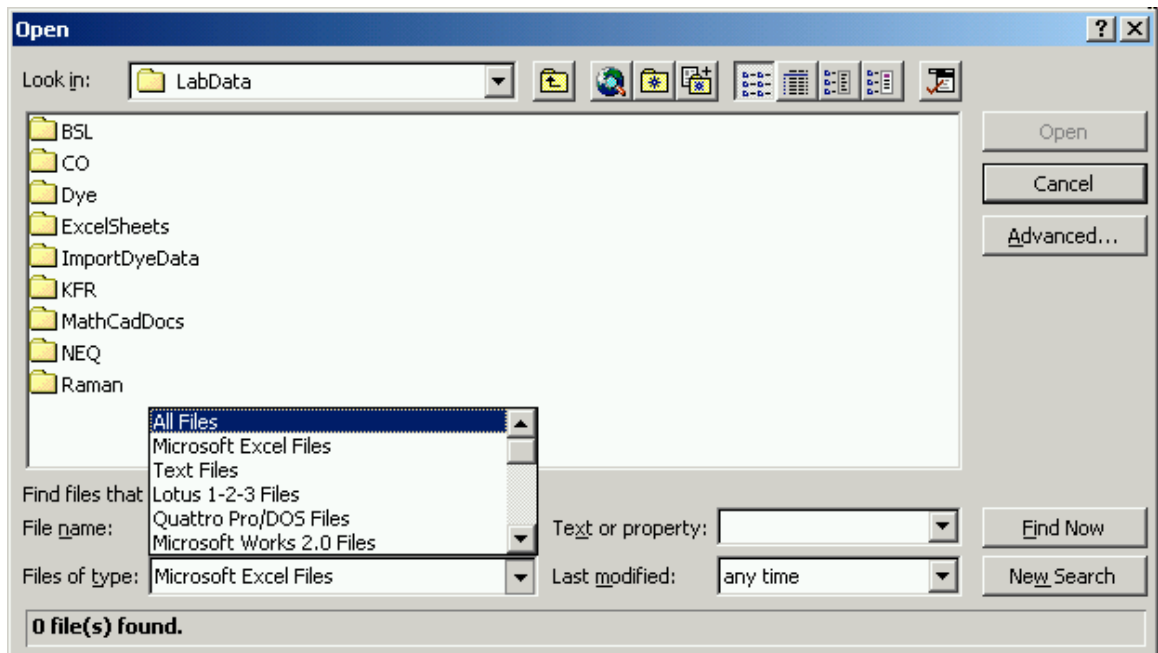


## Importing Conjugated Dye Data into Excel

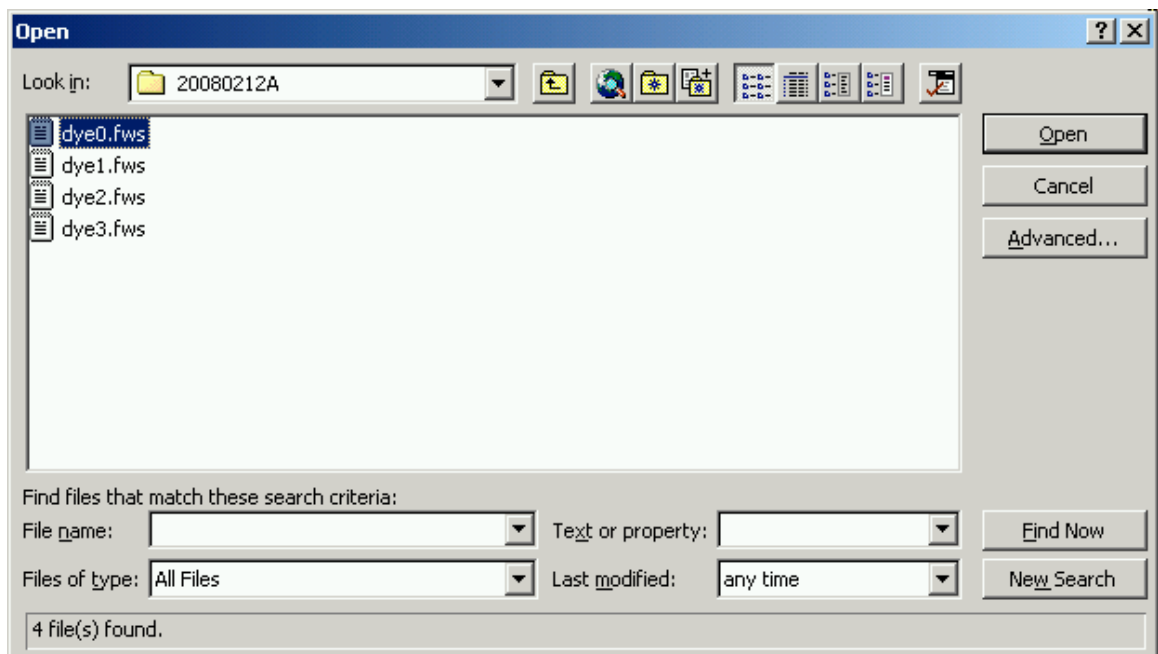
First open a blank excel document:



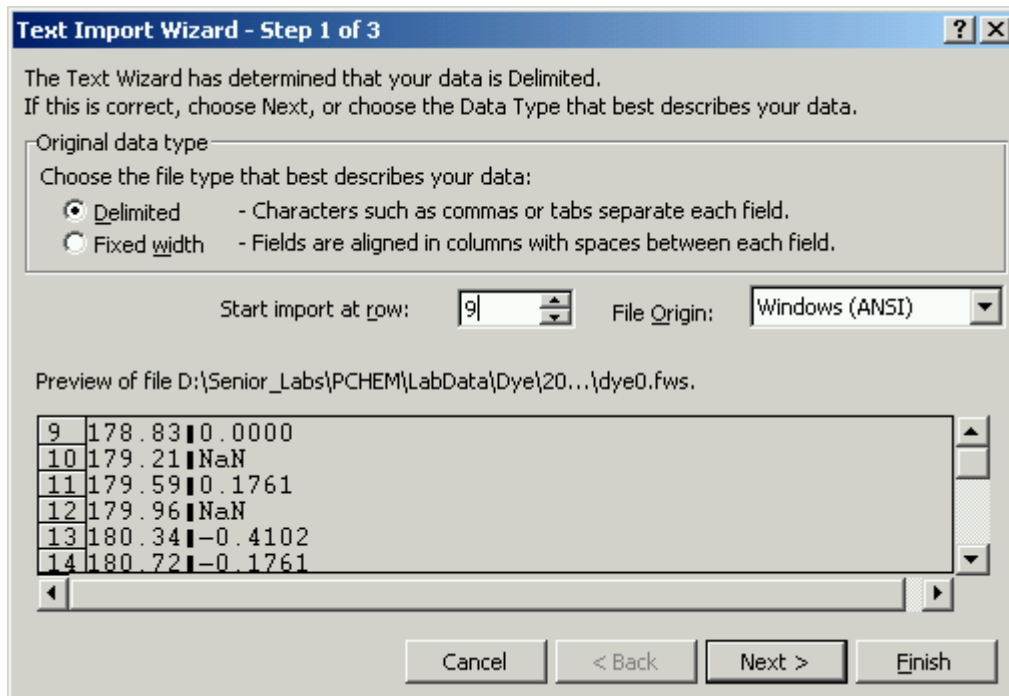
From the menu bar select File|Open



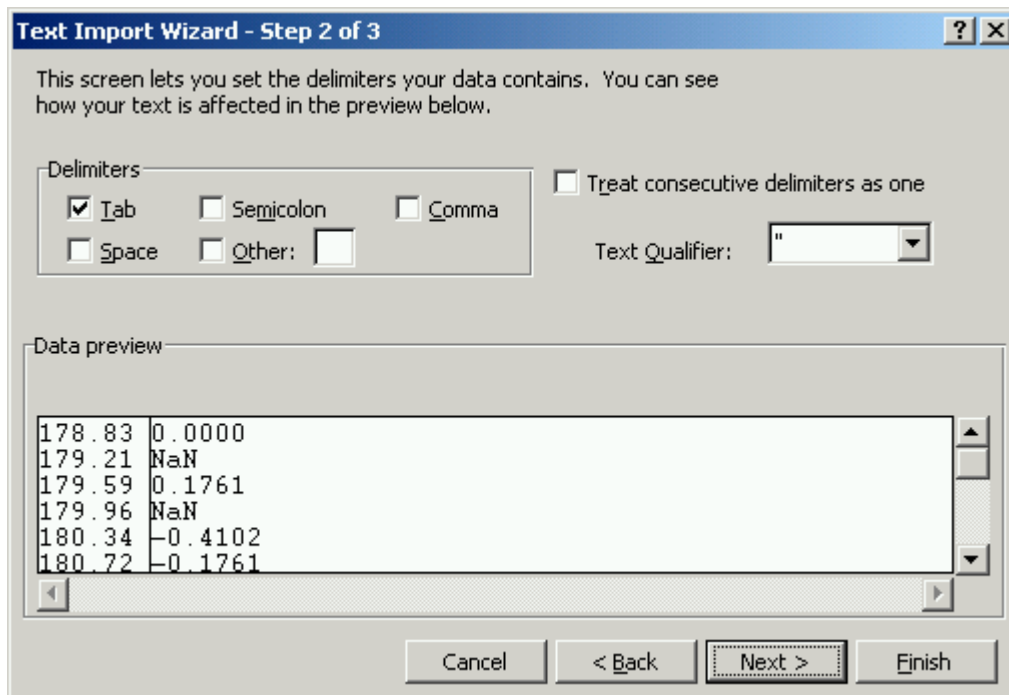
Set “Files of type:” to “All Files”



Navigate to the directory with the dye “.fws” files and select the first dye ( $j=0$ ); click on Open. This brings up the text import wizard.



Make sure “Delimited” is selected and set “Start import at row: to 9. Click Next.

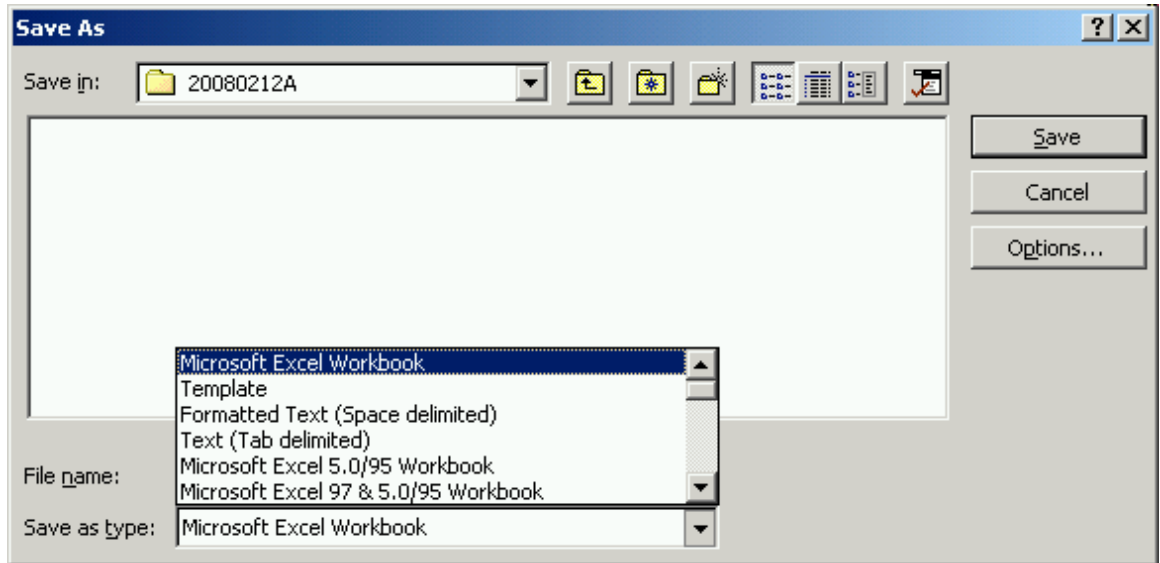


In the “Delimiters” box only Tab should be checked. Click Finish (you don’t need to go to step 3.)

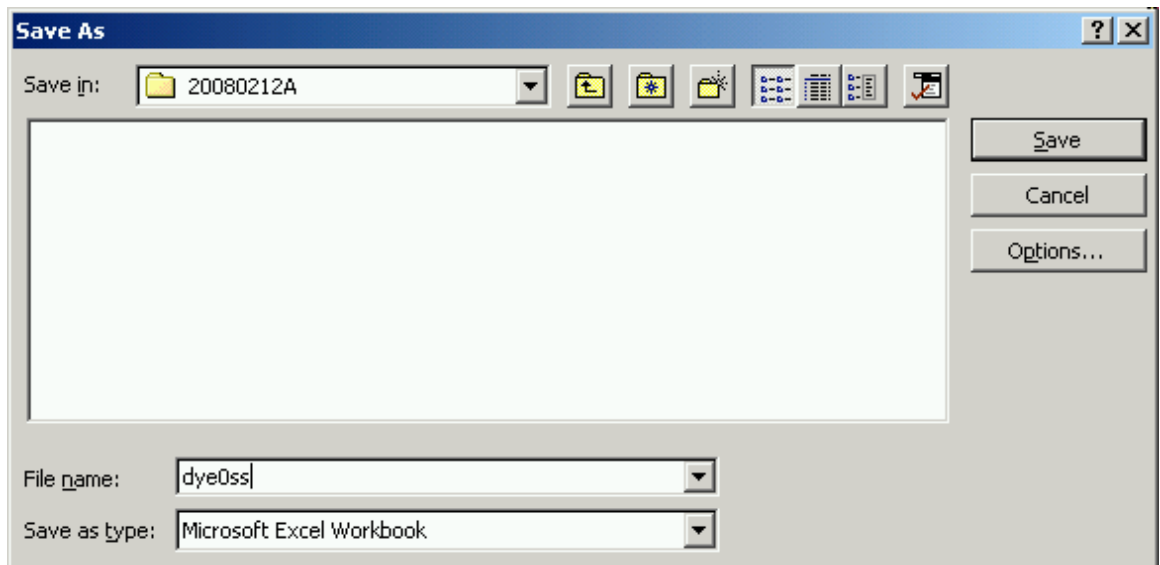
The screenshot shows a Microsoft Excel window with a spreadsheet titled 'dye0.fws'. The spreadsheet contains the following data:

	A	B	C	D	E	F	G	H	I
1	178.83	0							
2	179.21	NaN							
3	179.59	0.1761							
4	179.96	NaN							
5	180.34	-0.4102							
6	180.72	-0.1761							
7	181.09	0.1461							
8	181.47	0.6021							
9	181.85	NaN							
10	182.23	0.7782							
11	182.6	0.0872							
12	182.98	-0.8751							
13	183.36	NaN							
14	183.73	-0.1761							
15	184.11	0.0621							
16	184.49	-0.0544							
17	184.86	-0.1761							
18	185.24	NaN							
19	185.62	NaN							
20	185.99	NaN							
21	186.37	0.3424							
22	186.74	0.2499							
23	187.12	0.0706							
24	187.5	NaN							
25	187.87	0.1984							
26	188.25	0.028							
27	188.63	-0.0294							
28	189	-0.0152							
29	189.38	0.0162							
30	189.76	0.0288							
31	190.13	0.058							
32	190.51	0.0495							
33	190.88	0.0669							
34	191.26	0.0746							
35	191.64	0.0809							

The import of the first file is now complete. Now save it as an excel spreadsheet with a new name.



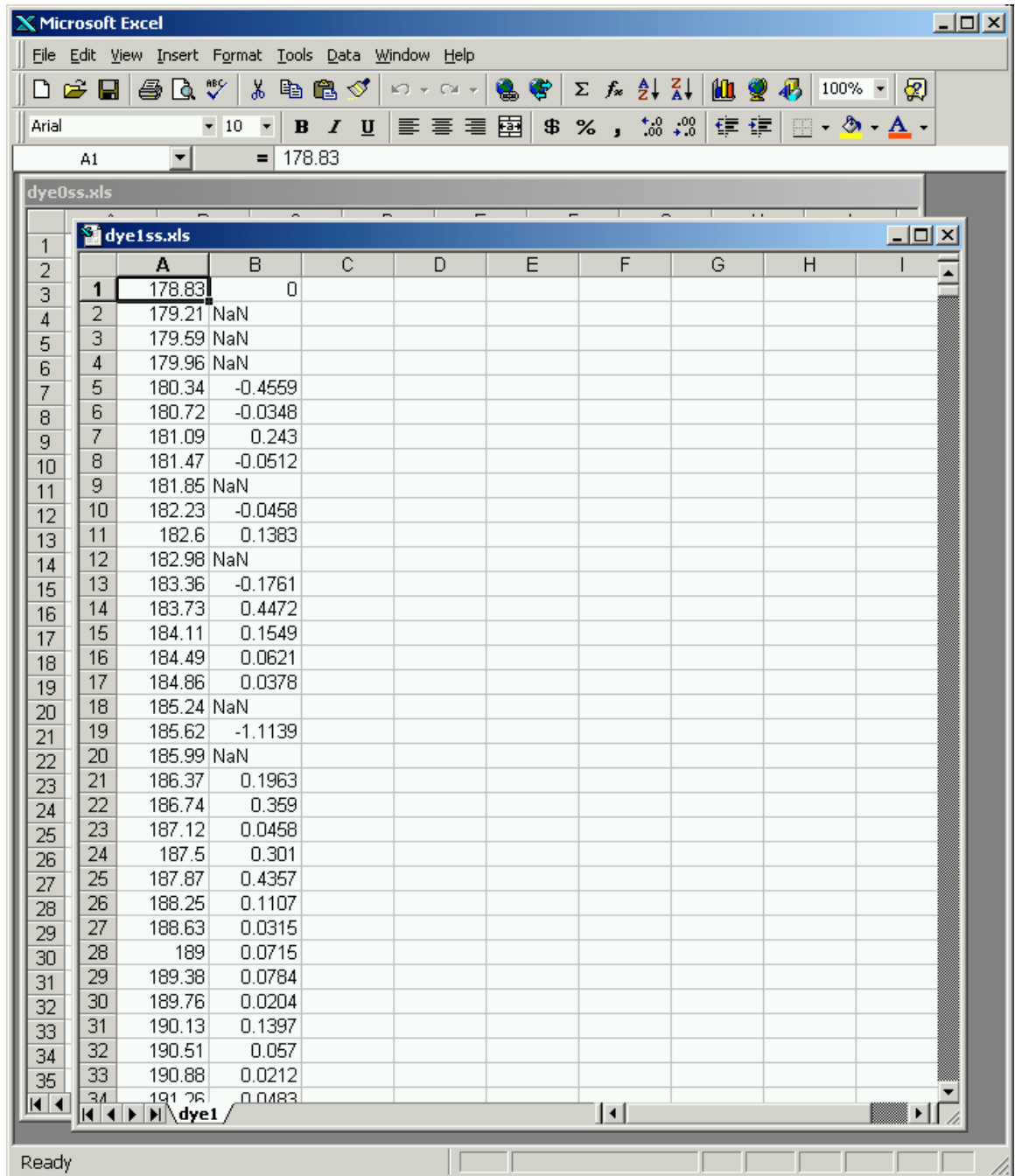
From the menu bar select File|Save As; set “Save as type:” to Microsoft Excel Workbook



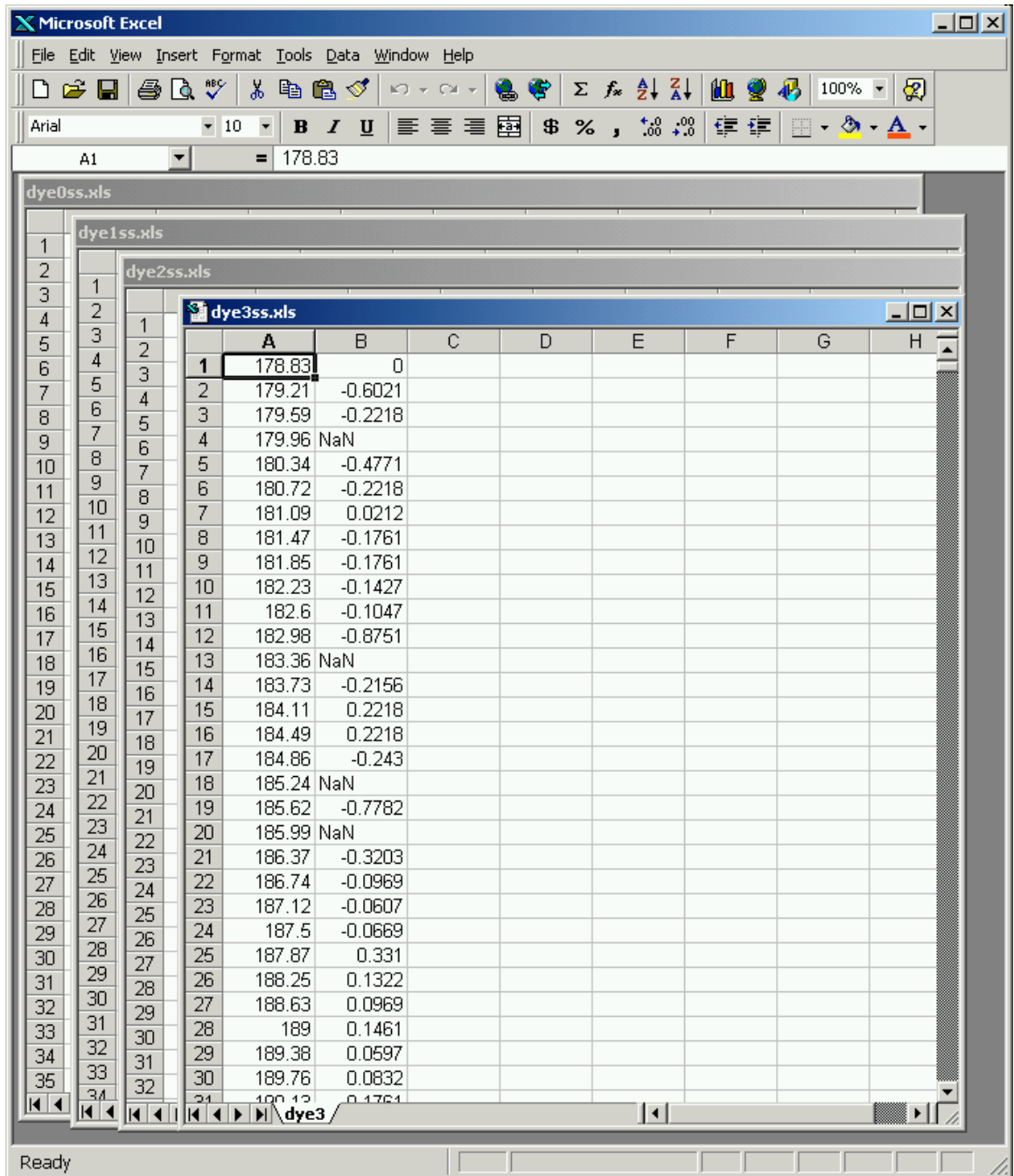
Put in a new file name (so you don't overwrite your original file) and click Save.

	A	B	C	D	E	F	G	H	I
1	178.83	0							
2	179.21	NaN							
3	179.59	0.1761							
4	179.96	NaN							
5	180.34	-0.4102							
6	180.72	-0.1761							
7	181.09	0.1461							
8	181.47	0.6021							
9	181.85	NaN							
10	182.23	0.7782							
11	182.6	0.0872							
12	182.98	-0.8751							
13	183.36	NaN							
14	183.73	-0.1761							
15	184.11	0.0621							
16	184.49	-0.0544							
17	184.86	-0.1761							
18	185.24	NaN							
19	185.62	NaN							
20	185.99	NaN							
21	186.37	0.3424							
22	186.74	0.2499							
23	187.12	0.0706							
24	187.5	NaN							
25	187.87	0.1984							
26	188.25	0.028							
27	188.63	-0.0294							
28	189	-0.0152							
29	189.38	0.0162							
30	189.76	0.0288							
31	190.13	0.058							
32	190.51	0.0495							
33	190.88	0.0669							
34	191.26	0.0746							
35	191.64	0.0809							

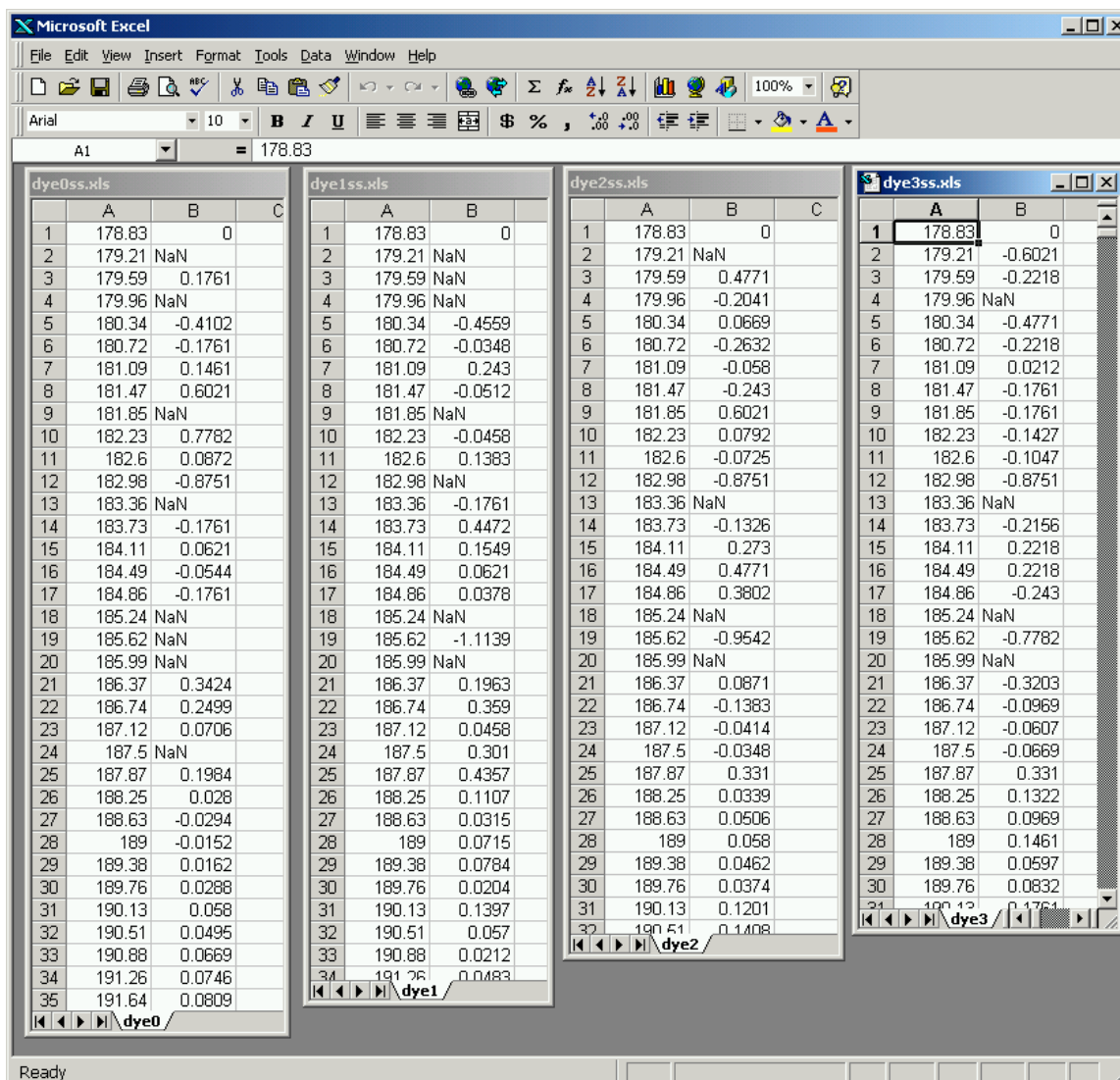
The remaining three files can be imported in a similar manner. Excel will create a new spreadsheet for each file.



Here is how it might look after the second dye ( $j=1$ ) has been imported.

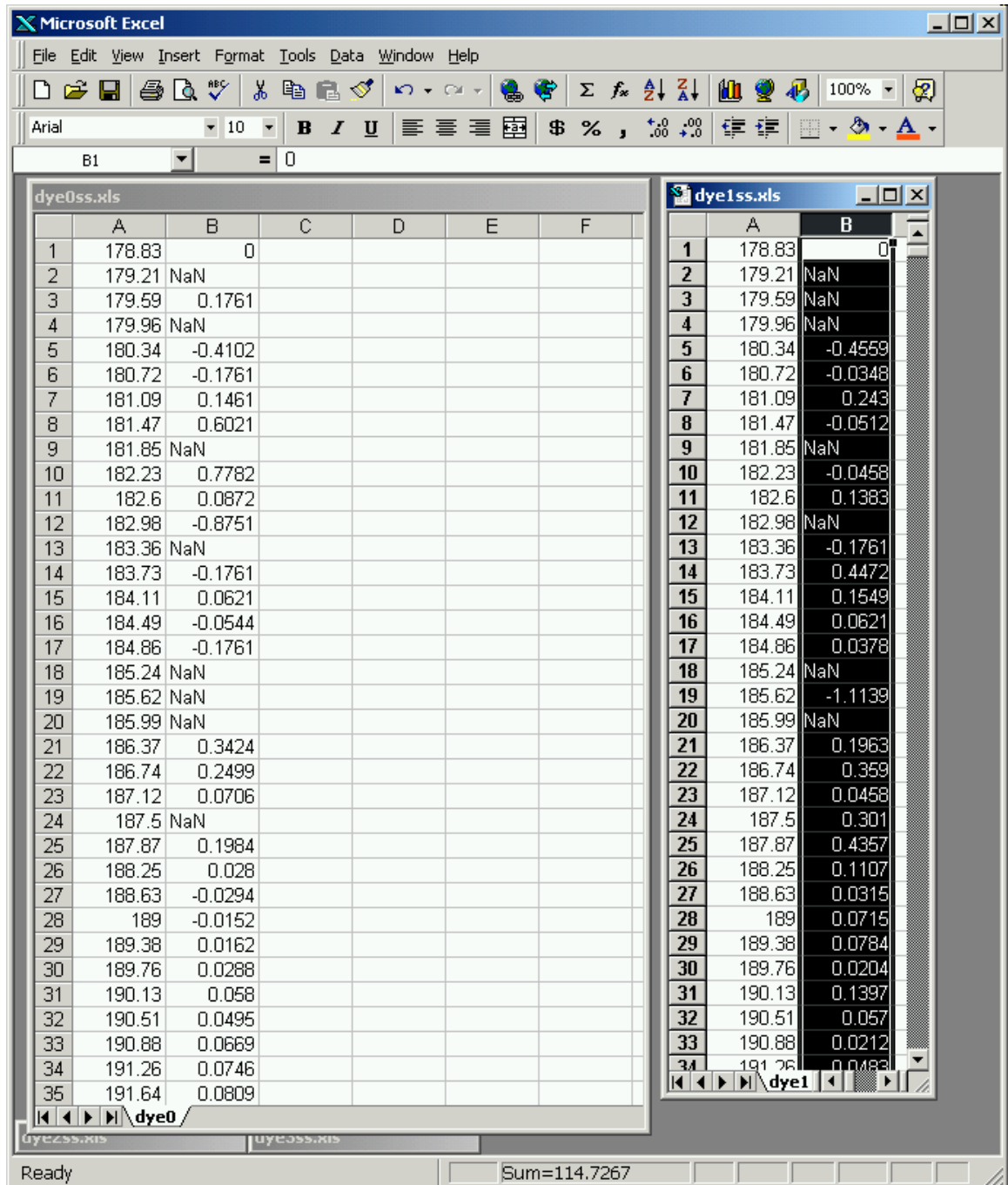


and after all four dyes have been imported.

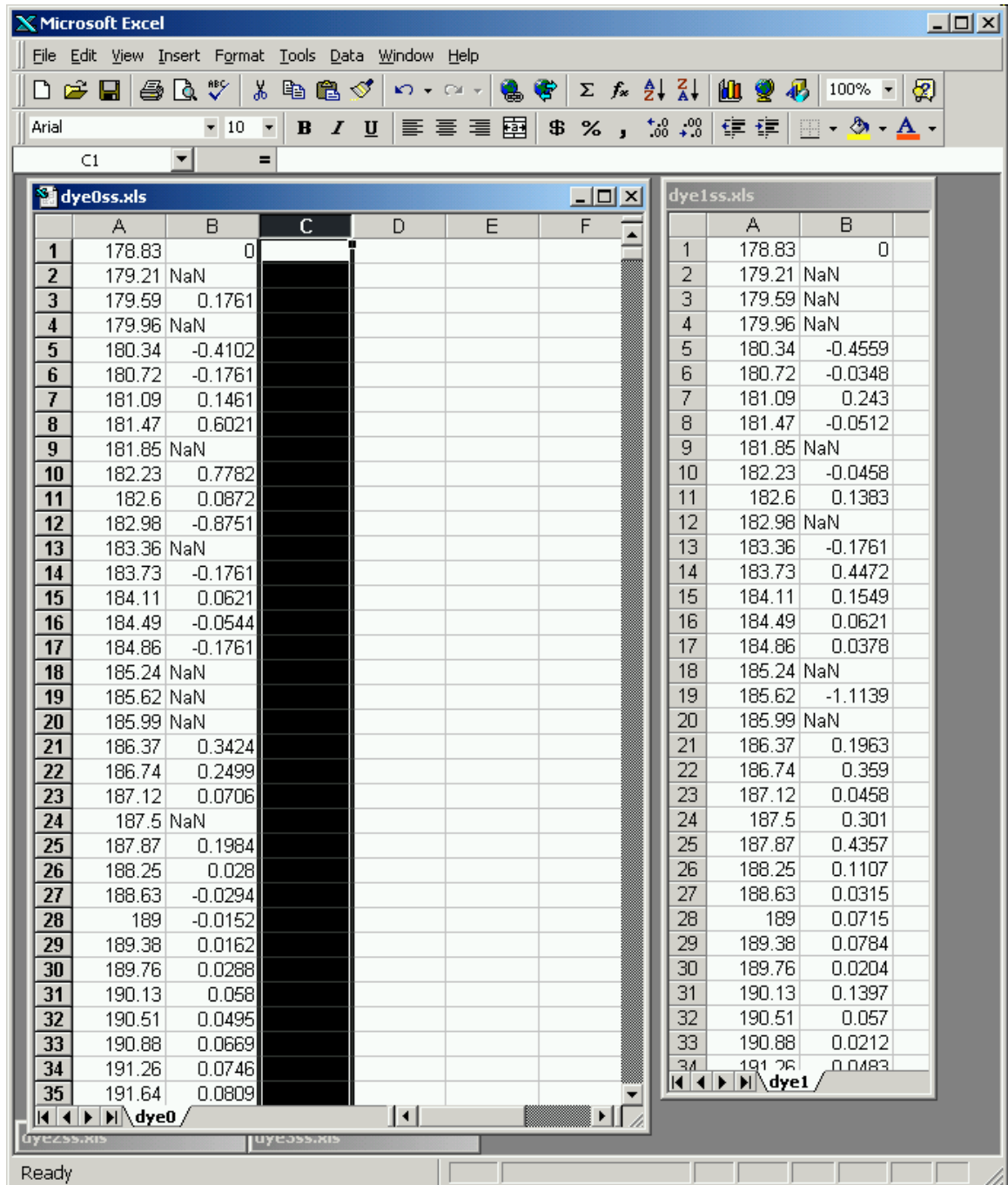


And here it is with the four spreadsheets resized and positioned so that all are visible. Note that column A (wavelength) is the same in all four sheets.

It is possible to combine the data into a single spreadsheet (so that, for example, all four spectra can be plotted on a single graph) by copying columns B from the sheets for dye1, dye2, and dye3 to columns C, D, and E of the dye0 sheet (and of course saving it under a new name.)



(The sheets for dye2 and dye3 have been minimized for clarity and the sheet for dye0 widened.) Select column B of dye1 by clicking on the B at the top of the column. On menu bar select Edit|Copy.



On the dye0 sheet select column C by clicking on the C at the top of the column.  
On the menu bar select Edit|Paste.

The image shows a Microsoft Excel window with two spreadsheets open side-by-side. The left spreadsheet is named 'dye0ss.xls' and the right is 'dye1ss.xls'. Both spreadsheets contain data for 35 rows. The left spreadsheet has columns A through F, while the right one has columns A through B. The data in the left spreadsheet includes values in columns A, B, and C, with some cells containing 'NaN'. The right spreadsheet contains data in columns A and B. The status bar at the bottom of the Excel window shows 'Sum=114.7267'.

Row	A	B	C	D	E	F
1	178.83	0	0			
2	179.21	NaN	NaN			
3	179.59	0.1761	NaN			
4	179.96	NaN	NaN			
5	180.34	-0.4102	-0.4559			
6	180.72	-0.1761	-0.0348			
7	181.09	0.1461	0.243			
8	181.47	0.6021	-0.0512			
9	181.85	NaN	NaN			
10	182.23	0.7782	-0.0458			
11	182.6	0.0872	0.1383			
12	182.98	-0.8751	NaN			
13	183.36	NaN	-0.1761			
14	183.73	-0.1761	0.4472			
15	184.11	0.0621	0.1549			
16	184.49	-0.0544	0.0621			
17	184.86	-0.1761	0.0378			
18	185.24	NaN	NaN			
19	185.62	NaN	-1.1139			
20	185.99	NaN	NaN			
21	186.37	0.3424	0.1963			
22	186.74	0.2499	0.359			
23	187.12	0.0706	0.0458			
24	187.5	NaN	0.301			
25	187.87	0.1984	0.4357			
26	188.25	0.028	0.1107			
27	188.63	-0.0294	0.0315			
28	189	-0.0152	0.0715			
29	189.38	0.0162	0.0784			
30	189.76	0.0288	0.0204			
31	190.13	0.058	0.1397			
32	190.51	0.0495	0.057			
33	190.88	0.0669	0.0212			
34	191.26	0.0746	0.0483			
35	191.64	0.0809	0.0044			

Repeat the copy/paste procedure for dye2 and dye3 to columns D & E.

Microsoft Excel

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U

F1 =

dyeall.xls

	A	B	C	D	E
1	178.83	0	0	0	0
2	179.21	NaN	NaN	NaN	-0.6021
3	179.59	0.1761	NaN	0.4771	-0.2218
4	179.96	NaN	NaN	-0.2041	NaN
5	180.34	-0.4102	-0.4559	0.0669	-0.4771
6	180.72	-0.1761	-0.0348	-0.2632	-0.2218
7	181.09	0.1461	0.243	-0.058	0.0212
8	181.47	0.6021	-0.0512	-0.243	-0.1761
9	181.85	NaN	NaN	0.6021	-0.1761
10	182.23	0.7782	-0.0458	0.0792	-0.1427
11	182.6	0.0872	0.1383	-0.0725	-0.1047
12	182.98	-0.8751	NaN	-0.8751	-0.8751
13	183.36	NaN	-0.1761	NaN	NaN
14	183.73	-0.1761	0.4472	-0.1326	-0.2156
15	184.11	0.0621	0.1549	0.273	0.2218
16	184.49	-0.0544	0.0621	0.4771	0.2218
17	184.86	-0.1761	0.0378	0.3802	-0.243
18	185.24	NaN	NaN	NaN	NaN
19	185.62	NaN	-1.1139	-0.9542	-0.7782
20	185.99	NaN	NaN	NaN	NaN
21	186.37	0.3424	0.1963	0.0871	-0.3203
22	186.74	0.2499	0.359	-0.1383	-0.0969
23	187.12	0.0706	0.0458	-0.0414	-0.0607
24	187.5	NaN	0.301	-0.0348	-0.0669
25	187.87	0.1984	0.4357	0.331	0.331
26	188.25	0.028	0.1107	0.0339	0.1322
27	188.63	-0.0294	0.0315	0.0506	0.0969
28	189	-0.0152	0.0715	0.058	0.1461
29	189.38	0.0162	0.0784	0.0462	0.0597
30	189.76	0.0288	0.0204	0.0374	0.0832
31	190.13	0.058	0.1397	0.1201	0.1761
32	190.51	0.0495	0.057	0.1408	0.1053
33	190.88	0.0669	0.0212	0.0669	0.1272
34	191.26	0.0746	0.0483	0.1224	0.2308
35	191.64	0.0809	0.0044	0.0969	0.0706

Ready

Here is the result after completing the copy/paste and a Save As with the file name “dyeall”.

Now add some labels:

The screenshot shows a Microsoft Excel window with a spreadsheet named 'dyeall.xls'. The spreadsheet has columns A through F and rows 1 through 35. The data in the spreadsheet is as follows:

	A	B	C	D	E	F
1	178.83	0	0	0	0	
2	179.21	NaN	NaN	NaN	-0.6021	
3	179.59	0.1761	NaN	0.4771	-0.2218	
4	179.96	NaN	NaN	-0.2041	NaN	
5	180.34	-0.4102	-0.4559	0.0669	-0.4771	
6	180.72	-0.1761	-0.0348	-0.2632	-0.2218	
7	181.09	0.1461	0.243	-0.058	0.0212	
8	181.47	0.6021	-0.0512	-0.243	-0.1761	
9	181.85	NaN	NaN	0.6021	-0.1761	
10	182.23	0.7782	-0.0458	0.0792	-0.1427	
11	182.6	0.0872	0.1383	-0.0725	-0.1047	
12	182.98	-0.8751	NaN	-0.8751	-0.8751	
13	183.36	NaN	-0.1761	NaN	NaN	
14	183.73	-0.1761	0.4472	-0.1326	-0.2156	
15	184.11	0.0621	0.1549	0.273	0.2218	
16	184.49	-0.0544	0.0621	0.4771	0.2218	
17	184.86	-0.1761	0.0378	0.3802	-0.243	
18	185.24	NaN	NaN	NaN	NaN	
19	185.62	NaN	-1.1139	-0.9542	-0.7782	
20	185.99	NaN	NaN	NaN	NaN	
21	186.37	0.3424	0.1963	0.0871	-0.3203	
22	186.74	0.2499	0.359	-0.1383	-0.0969	
23	187.12	0.0706	0.0458	-0.0414	-0.0607	
24	187.5	NaN	0.301	-0.0348	-0.0669	
25	187.87	0.1984	0.4357	0.331	0.331	
26	188.25	0.028	0.1107	0.0339	0.1322	
27	188.63	-0.0294	0.0315	0.0506	0.0969	
28	189	-0.0152	0.0715	0.058	0.1461	
29	189.38	0.0162	0.0784	0.0462	0.0597	
30	189.76	0.0288	0.0204	0.0374	0.0832	
31	190.13	0.058	0.1397	0.1201	0.1761	
32	190.51	0.0495	0.057	0.1408	0.1053	
33	190.88	0.0669	0.0212	0.0669	0.1272	
34	191.26	0.0746	0.0483	0.1224	0.2308	
35	191.64	0.0809	0.0044	0.0969	0.0706	

Select Row 1 by clicking on the 1 at the left of the row. On the menu bar click Insert|Rows.

Microsoft Excel

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U \$ % , +.0 +.00

A1 =

dyeall.xls

	A	B	C	D	E	F
1						
2	178.83	0	0	0	0	
3	179.21	NaN	NaN	NaN	-0.6021	
4	179.59	0.1761	NaN	0.4771	-0.2218	
5	179.96	NaN	NaN	-0.2041	NaN	
6	180.34	-0.4102	-0.4559	0.0669	-0.4771	
7	180.72	-0.1761	-0.0348	-0.2632	-0.2218	
8	181.09	0.1461	0.243	-0.058	0.0212	
9	181.47	0.6021	-0.0512	-0.243	-0.1761	
10	181.85	NaN	NaN	0.6021	-0.1761	
11	182.23	0.7782	-0.0458	0.0792	-0.1427	
12	182.6	0.0872	0.1383	-0.0725	-0.1047	
13	182.98	-0.8751	NaN	-0.8751	-0.8751	
14	183.36	NaN	-0.1761	NaN	NaN	
15	183.73	-0.1761	0.4472	-0.1326	-0.2156	
16	184.11	0.0621	0.1549	0.273	0.2218	
17	184.49	-0.0544	0.0621	0.4771	0.2218	
18	184.86	-0.1761	0.0378	0.3802	-0.243	
19	185.24	NaN	NaN	NaN	NaN	
20	185.62	NaN	-1.1139	-0.9542	-0.7782	
21	185.99	NaN	NaN	NaN	NaN	
22	186.37	0.3424	0.1963	0.0871	-0.3203	
23	186.74	0.2499	0.359	-0.1383	-0.0969	
24	187.12	0.0706	0.0458	-0.0414	-0.0607	
25	187.5	NaN	0.301	-0.0348	-0.0669	
26	187.87	0.1984	0.4357	0.331	0.331	
27	188.25	0.028	0.1107	0.0339	0.1322	
28	188.63	-0.0294	0.0315	0.0506	0.0969	
29	189	-0.0152	0.0715	0.058	0.1461	
30	189.38	0.0162	0.0784	0.0462	0.0597	
31	189.76	0.0288	0.0204	0.0374	0.0832	
32	190.13	0.058	0.1397	0.1201	0.1761	
33	190.51	0.0495	0.057	0.1408	0.1053	
34	190.88	0.0669	0.0212	0.0669	0.1272	
35	191.26	0.0746	0.0483	0.1224	0.2308	

Ready

Now there is a blank row at the top.

Microsoft Excel

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U

F1 =

dyeall.xls

	A	B	C	D	E	F
1	$\lambda$ (nm)	A(dye0)	A(dye1)	A(dye2)	A(dye3)	
2	178.83	0	0	0	0	
3	179.21	NaN	NaN	NaN	-0.6021	
4	179.59	0.1761	NaN	0.4771	-0.2218	
5	179.96	NaN	NaN	-0.2041	NaN	
6	180.34	-0.4102	-0.4559	0.0669	-0.4771	
7	180.72	-0.1761	-0.0348	-0.2632	-0.2218	
8	181.09	0.1461	0.243	-0.058	0.0212	
9	181.47	0.6021	-0.0512	-0.243	-0.1761	
10	181.85	NaN	NaN	0.6021	-0.1761	
11	182.23	0.7782	-0.0458	0.0792	-0.1427	
12	182.6	0.0872	0.1383	-0.0725	-0.1047	
13	182.98	-0.8751	NaN	-0.8751	-0.8751	
14	183.36	NaN	-0.1761	NaN	NaN	
15	183.73	-0.1761	0.4472	-0.1326	-0.2156	
16	184.11	0.0621	0.1549	0.273	0.2218	
17	184.49	-0.0544	0.0621	0.4771	0.2218	
18	184.86	-0.1761	0.0378	0.3802	-0.243	
19	185.24	NaN	NaN	NaN	NaN	
20	185.62	NaN	-1.1139	-0.9542	-0.7782	
21	185.99	NaN	NaN	NaN	NaN	
22	186.37	0.3424	0.1963	0.0871	-0.3203	
23	186.74	0.2499	0.359	-0.1383	-0.0969	
24	187.12	0.0706	0.0458	-0.0414	-0.0607	
25	187.5	NaN	0.301	-0.0348	-0.0669	
26	187.87	0.1984	0.4357	0.331	0.331	
27	188.25	0.028	0.1107	0.0339	0.1322	
28	188.63	-0.0294	0.0315	0.0506	0.0969	
29	189	-0.0152	0.0715	0.058	0.1461	
30	189.38	0.0162	0.0784	0.0462	0.0597	
31	189.76	0.0288	0.0204	0.0374	0.0832	
32	190.13	0.058	0.1397	0.1201	0.1761	
33	190.51	0.0495	0.057	0.1408	0.1053	
34	190.88	0.0669	0.0212	0.0669	0.1272	
35	191.26	0.0746	0.0483	0.1224	0.2308	

Ready

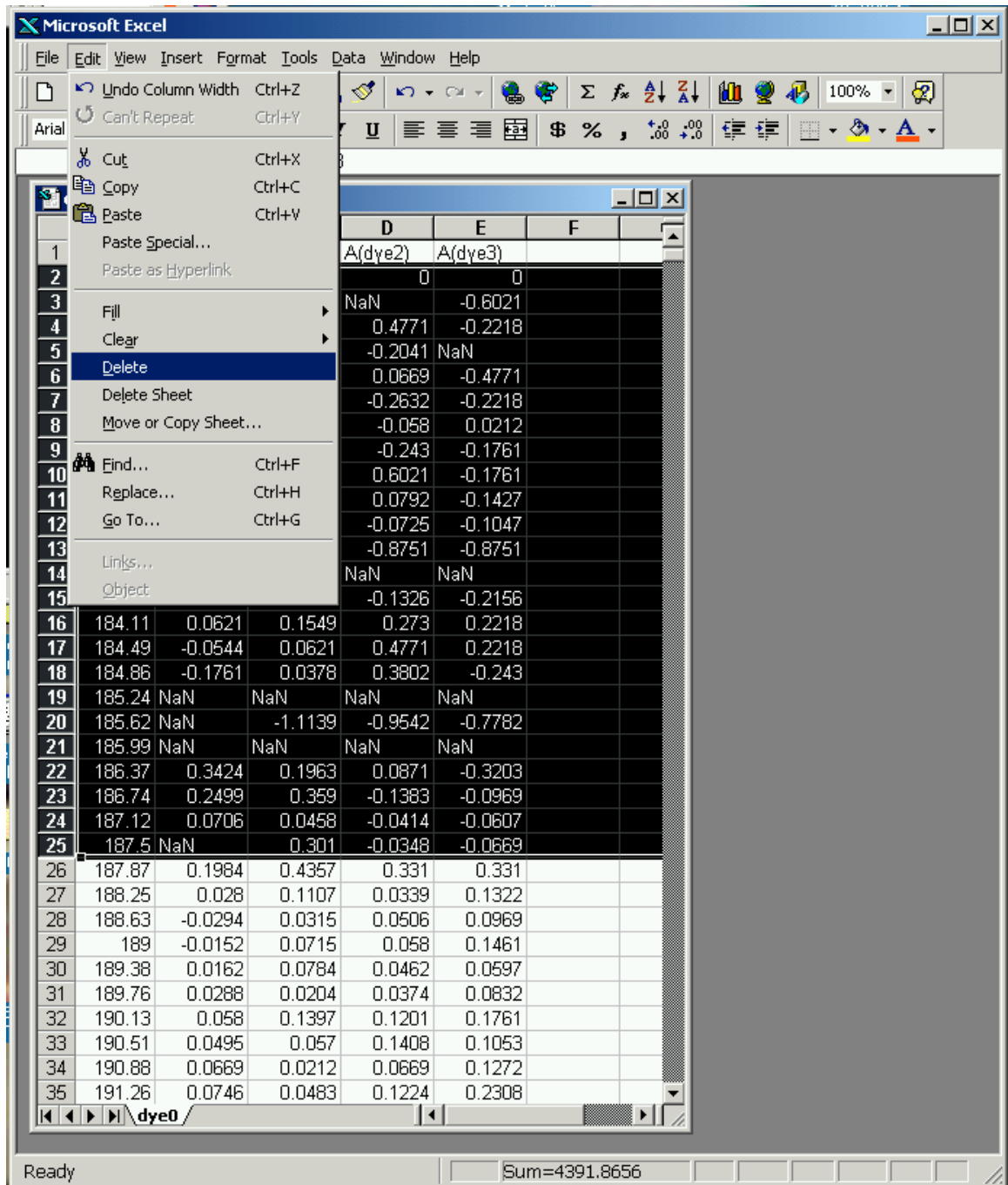
Put labels in the first row.

Now to get rid of the NaN (Not above Noise) cells. The best thing to do is eliminate all rows down to the last one that has NaN in it.

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F
1	λ(nm)	A(dye0)	A(dye1)	A(dye2)	A(dye3)	
2	178.83	0	0	0	0	
3	179.21	NaN	NaN	NaN	-0.6021	
4	179.59	0.1761	NaN	0.4771	-0.2218	
5	179.96	NaN	NaN	-0.2041	NaN	
6	180.34	-0.4102	-0.4559	0.0669	-0.4771	
7	180.72	-0.1761	-0.0348	-0.2632	-0.2218	
8	181.09	0.1461	0.243	-0.058	0.0212	
9	181.47	0.6021	-0.0512	-0.243	-0.1761	
10	181.85	NaN	NaN	0.6021	-0.1761	
11	182.23	0.7782	-0.0458	0.0792	-0.1427	
12	182.6	0.0872	0.1383	-0.0725	-0.1047	
13	182.98	-0.8751	NaN	-0.8751	-0.8751	
14	183.36	NaN	-0.1761	NaN	NaN	
15	183.73	-0.1761	0.4472	-0.1326	-0.2156	
16	184.11	0.0621	0.1549	0.273	0.2218	
17	184.49	-0.0544	0.0621	0.4771	0.2218	
18	184.86	-0.1761	0.0378	0.3802	-0.243	
19	185.24	NaN	NaN	NaN	NaN	
20	185.62	NaN	-1.1139	-0.9542	-0.7782	
21	185.99	NaN	NaN	NaN	NaN	
22	186.37	0.3424	0.1963	0.0871	-0.3203	
23	186.74	0.2499	0.359	-0.1383	-0.0969	
24	187.12	0.0706	0.0458	-0.0414	-0.0607	
25	187.5	NaN	0.301	-0.0348	-0.0669	
26	187.87	0.1984	0.4357	0.331	0.331	
27	188.25	0.028	0.1107	0.0339	0.1322	
28	188.63	-0.0294	0.0315	0.0506	0.0969	
29	189	-0.0152	0.0715	0.058	0.1461	
30	189.38	0.0162	0.0784	0.0462	0.0597	
31	189.76	0.0288	0.0204	0.0374	0.0832	
32	190.13	0.058	0.1397	0.1201	0.1761	
33	190.51	0.0495	0.057	0.1408	0.1053	
34	190.88	0.0669	0.0212	0.0669	0.1272	
35	191.26	0.0746	0.0483	0.1224	0.2308	

Place the cursor on the 2 at the left of row 2, press and hold the left mouse button and drag down to row 25 and release the mouse button. Result should be as shown above.



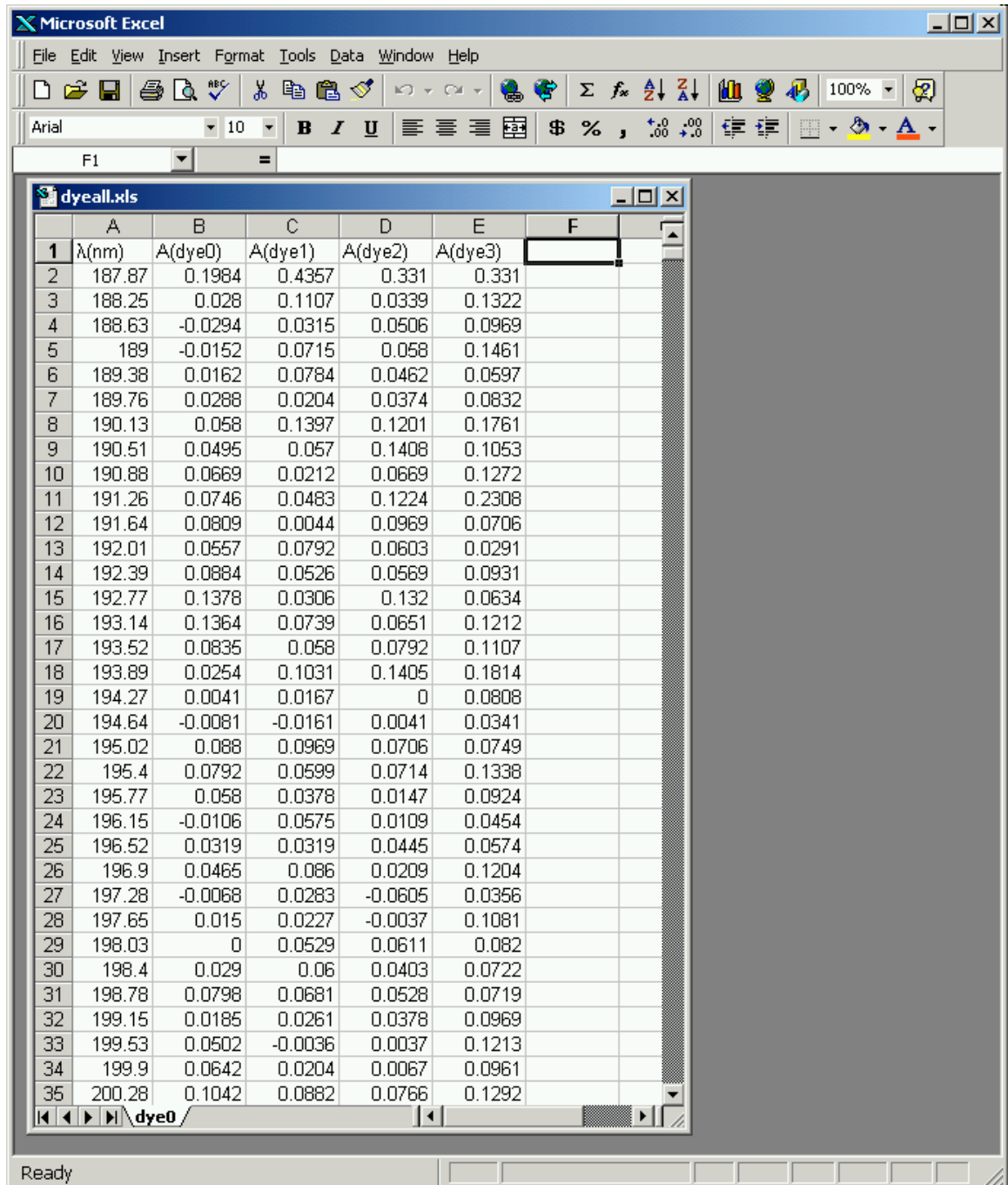
Do Edit|Delete as shown above.

The screenshot shows a Microsoft Excel spreadsheet titled 'dyeall.xls'. The spreadsheet has columns labeled A through F and rows numbered 1 through 35. The data is as follows:

Row	A	B	C	D	E	F
1	λ(nm)	A(dye0)	A(dye1)	A(dye2)	A(dye3)	
2	187.87	0.1984	0.4357	0.331	0.331	
3	188.25	0.028	0.1107	0.0339	0.1322	
4	188.63	-0.0294	0.0315	0.0506	0.0969	
5	189	-0.0152	0.0715	0.058	0.1461	
6	189.38	0.0162	0.0784	0.0462	0.0597	
7	189.76	0.0288	0.0204	0.0374	0.0832	
8	190.13	0.058	0.1397	0.1201	0.1761	
9	190.51	0.0495	0.057	0.1408	0.1053	
10	190.88	0.0669	0.0212	0.0669	0.1272	
11	191.26	0.0746	0.0483	0.1224	0.2308	
12	191.64	0.0809	0.0044	0.0969	0.0706	
13	192.01	0.0557	0.0792	0.0603	0.0291	
14	192.39	0.0884	0.0526	0.0569	0.0931	
15	192.77	0.1378	0.0306	0.132	0.0634	
16	193.14	0.1364	0.0739	0.0651	0.1212	
17	193.52	0.0835	0.058	0.0792	0.1107	
18	193.89	0.0254	0.1031	0.1405	0.1814	
19	194.27	0.0041	0.0167	0	0.0808	
20	194.64	-0.0081	-0.0161	0.0041	0.0341	
21	195.02	0.088	0.0969	0.0706	0.0749	
22	195.4	0.0792	0.0599	0.0714	0.1338	
23	195.77	0.058	0.0378	0.0147	0.0924	
24	196.15	-0.0106	0.0575	0.0109	0.0454	
25	196.52	0.0319	0.0319	0.0445	0.0574	
26	196.9	0.0465	0.086	0.0209	0.1204	
27	197.28	-0.0068	0.0283	-0.0605	0.0356	
28	197.65	0.015	0.0227	-0.0037	0.1081	
29	198.03	0	0.0529	0.0611	0.082	
30	198.4	0.029	0.06	0.0403	0.0722	
31	198.78	0.0798	0.0681	0.0528	0.0719	
32	199.15	0.0185	0.0261	0.0378	0.0969	
33	199.53	0.0502	-0.0036	0.0037	0.1213	
34	199.9	0.0642	0.0204	0.0067	0.0961	
35	200.28	0.1042	0.0882	0.0766	0.1292	

The status bar at the bottom of the Excel window shows 'Ready' and 'Sum=4620.3584'.

The result will be as shown above. The original rows 2-25 have been deleted and all the following rows 26+ pulled up.



Click cell F1 to remove the highlight.