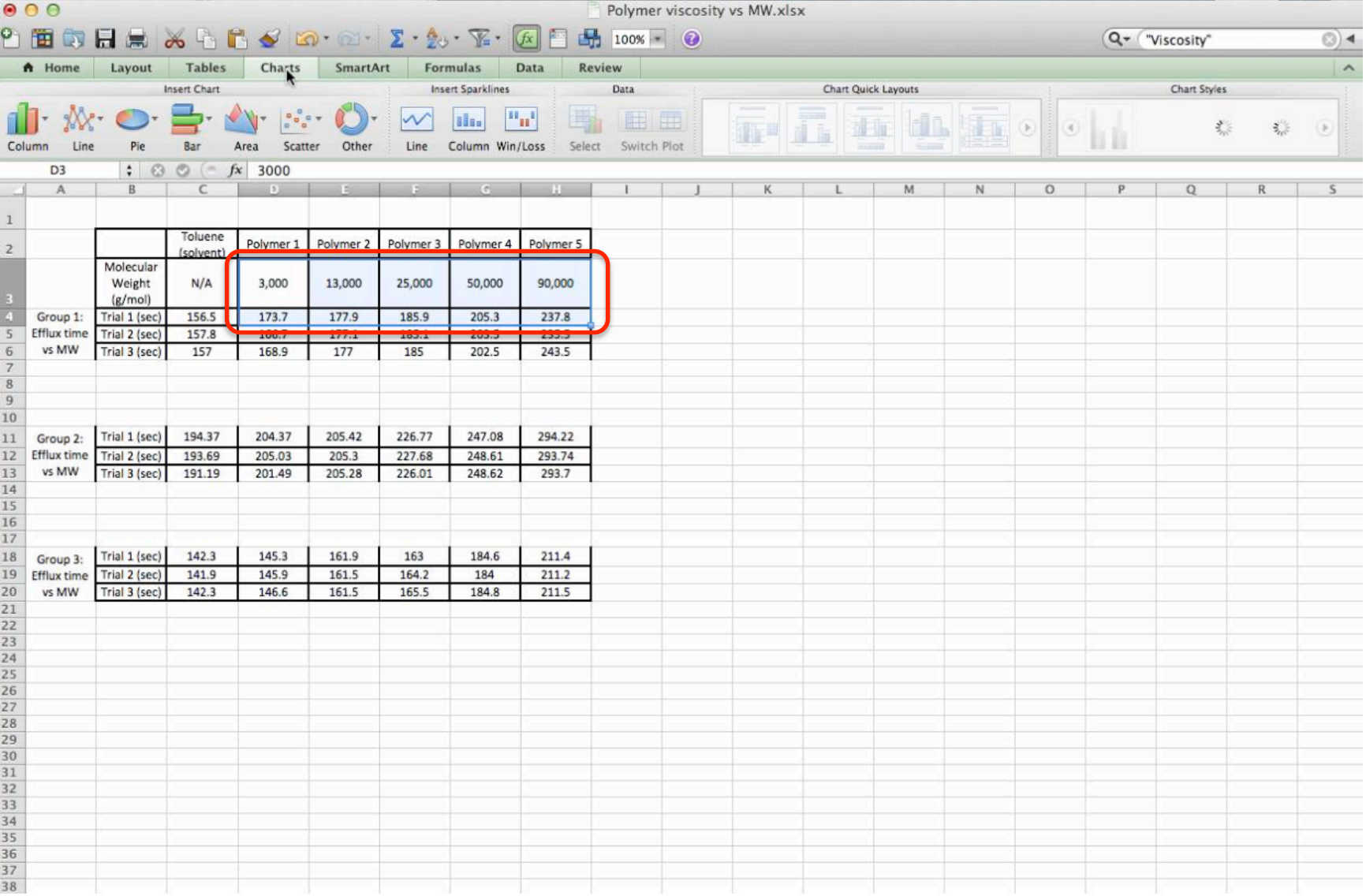
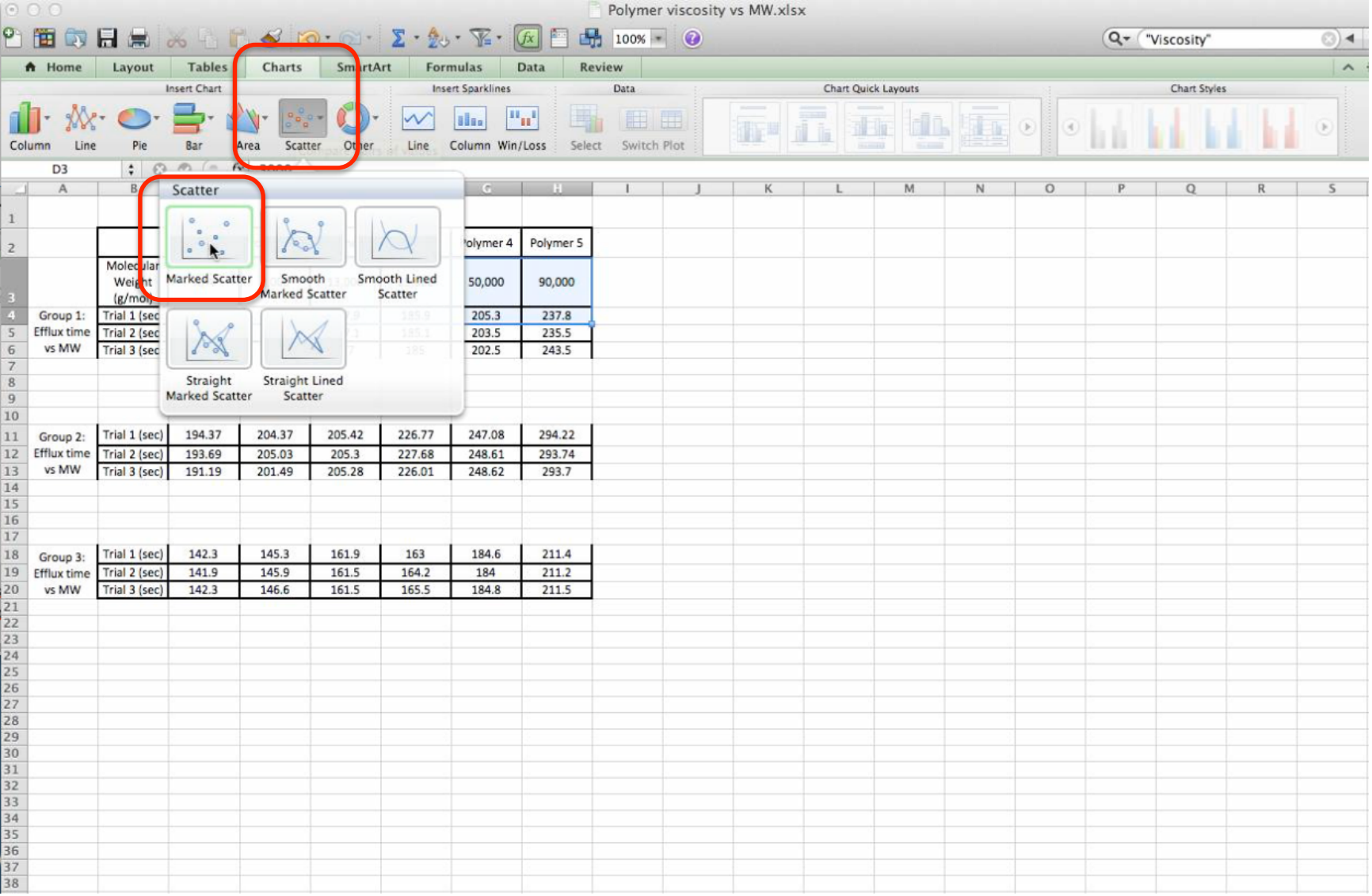
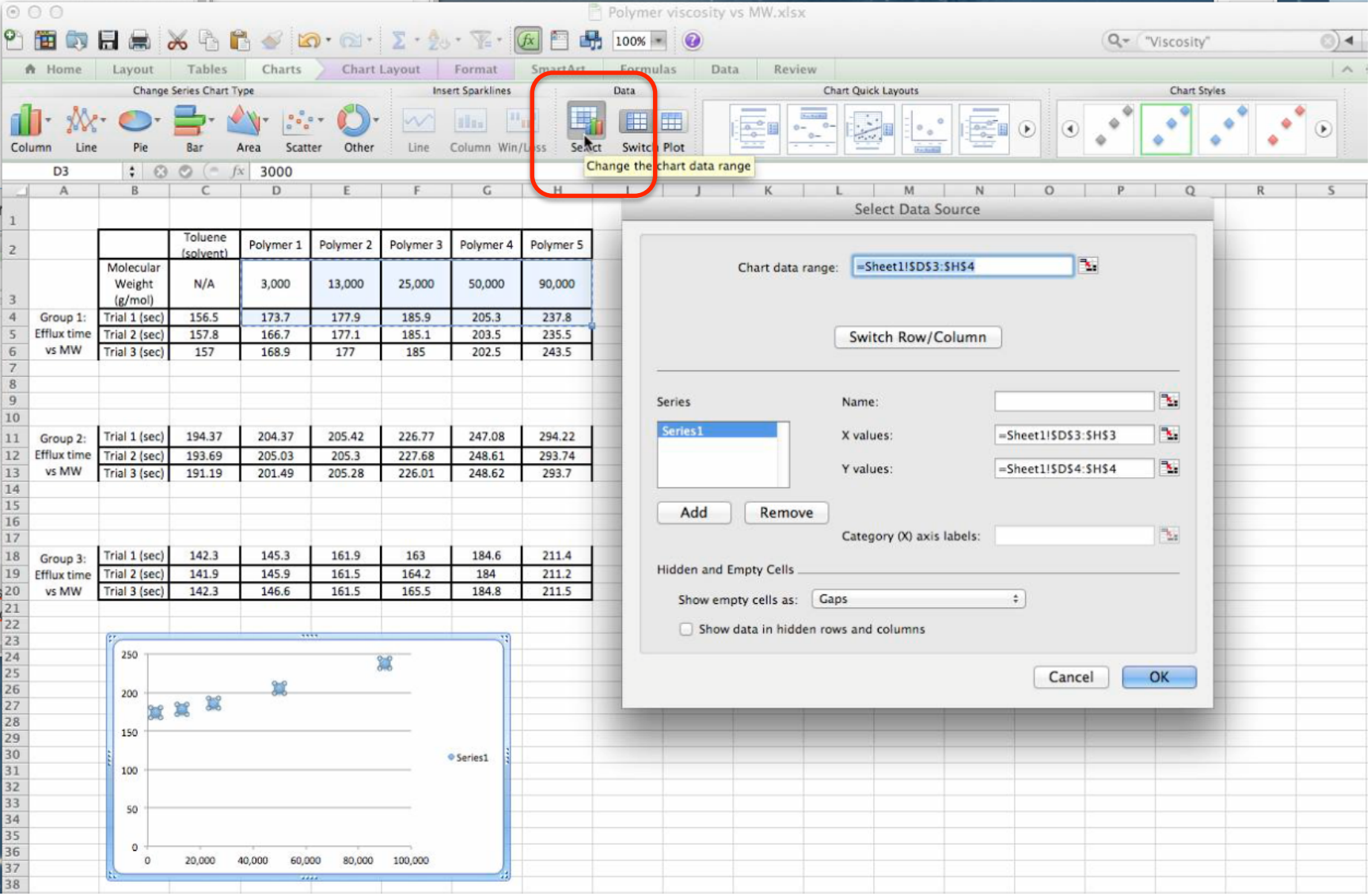


		Toluene (solvent)	Polymer 1	Polymer 2	Polymer 3	Polymer 4	Polymer 5
	Molecular Weight (g/mol)	N/A	3,000	13,000	25,000	50,000	90,000
Group 1: Efflux time vs MW	Trial 1 (sec)	156.5	173.7	177.9	185.9	205.3	237.8
	Trial 2 (sec)	157.8	166.7	177.1	185.1	205.3	235.5
	Trial 3 (sec)	157	168.9	177	185	202.5	243.5
Group 2: Efflux time vs MW	Trial 1 (sec)	194.37	204.37	205.42	226.77	247.08	294.22
	Trial 2 (sec)	193.69	205.03	205.3	227.68	248.61	293.74
	Trial 3 (sec)	191.19	201.49	205.28	226.01	248.62	293.7
Group 3: Efflux time vs MW	Trial 1 (sec)	142.3	145.3	161.9	163	184.6	211.4
	Trial 2 (sec)	141.9	145.9	161.5	164.2	184	211.2
	Trial 3 (sec)	142.3	146.6	161.5	165.5	184.8	211.5

Highlight the cells for Group 1 - Molecular Weights & Trial 1

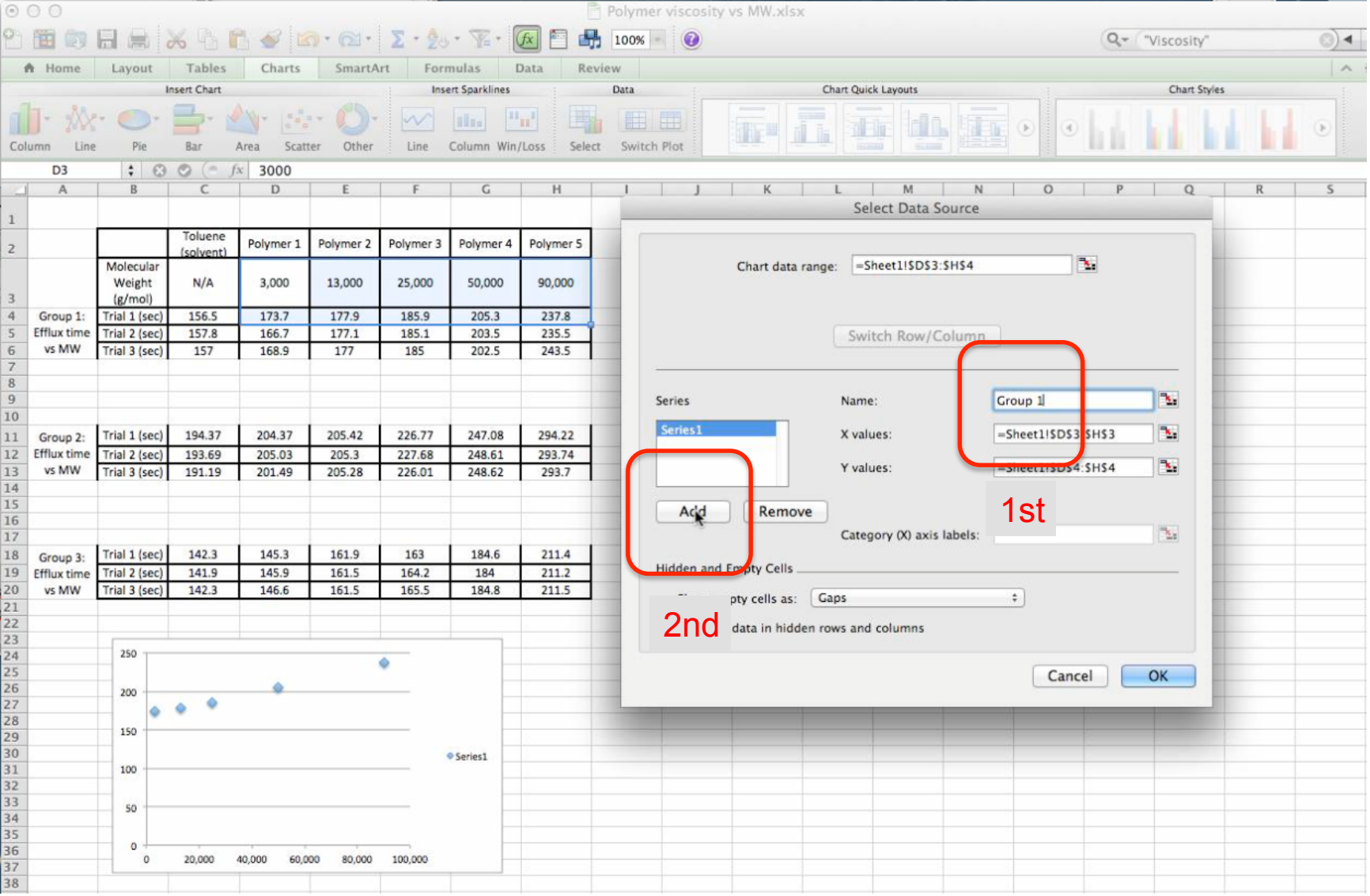


Insert a Marked Scatter Plot

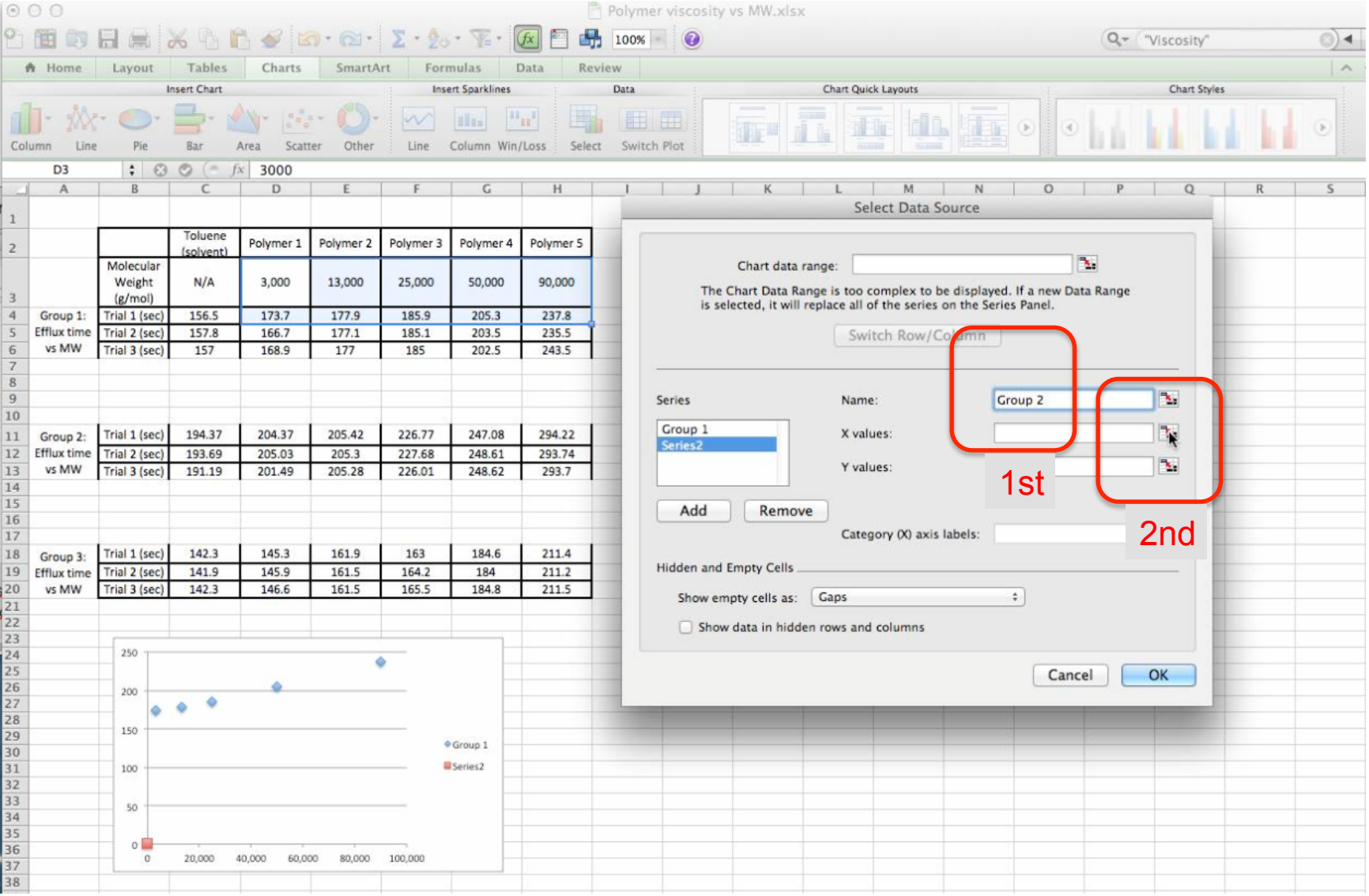


		Toluene (solvent)	Polymer 1	Polymer 2	Polymer 3	Polymer 4	Polymer 5
	Molecular Weight (g/mol)	N/A	3,000	13,000	25,000	50,000	90,000
Group 1: Efflux time vs MW	Trial 1 (sec)	156.5	173.7	177.9	185.9	205.3	237.8
	Trial 2 (sec)	157.8	166.7	177.1	185.1	203.5	235.5
	Trial 3 (sec)	157	168.9	177	185	202.5	243.5
Group 2: Efflux time vs MW	Trial 1 (sec)	194.37	204.37	205.42	226.77	247.08	294.22
	Trial 2 (sec)	193.69	205.03	205.3	227.68	248.61	293.74
	Trial 3 (sec)	191.19	201.49	205.28	226.01	248.62	293.7
Group 3: Efflux time vs MW	Trial 1 (sec)	142.3	145.3	161.9	163	184.6	211.4
	Trial 2 (sec)	141.9	145.9	161.5	164.2	184	211.2
	Trial 3 (sec)	142.3	146.6	161.5	165.5	184.8	211.5

Under the “Charts” Thumbnail you should find an icon call “Select”. Click on it to open the “Select Data Source” box

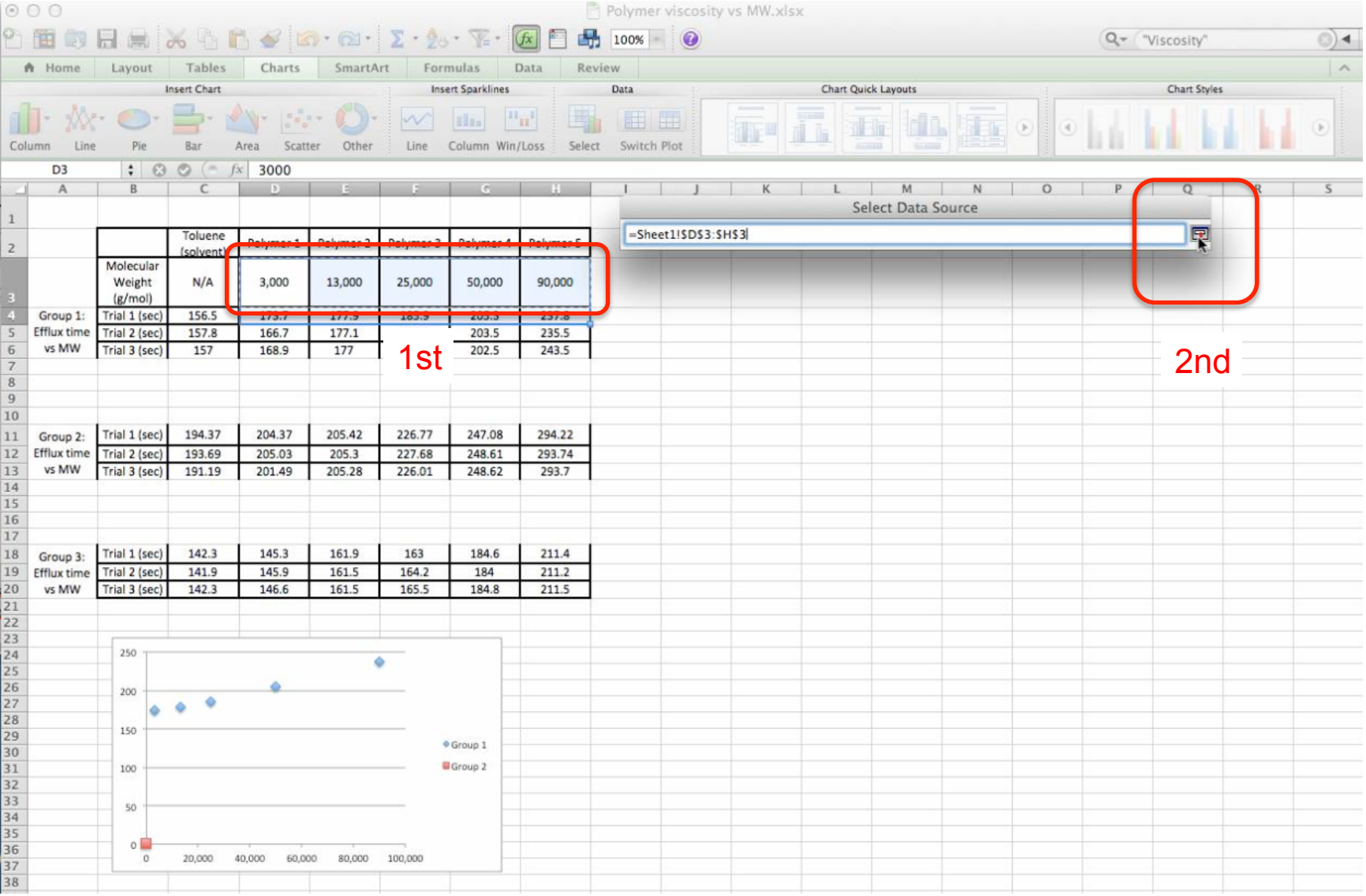


First, rename Series1 as “Group 1” and then click on the “Add” button to add a second series of data.



		Toluene (solvent)	Polymer 1	Polymer 2	Polymer 3	Polymer 4	Polymer 5
	Molecular Weight (g/mol)	N/A	3,000	13,000	25,000	50,000	90,000
Group 1: Efflux time vs MW	Trial 1 (sec)	156.5	173.7	177.9	185.9	205.3	237.8
	Trial 2 (sec)	157.8	166.7	177.1	185.1	203.5	235.5
	Trial 3 (sec)	157	168.9	177	185	202.5	243.5
Group 2: Efflux time vs MW	Trial 1 (sec)	194.37	204.37	205.42	226.77	247.08	294.22
	Trial 2 (sec)	193.69	205.03	205.3	227.68	248.61	293.74
	Trial 3 (sec)	191.19	201.49	205.28	226.01	248.62	293.7
Group 3: Efflux time vs MW	Trial 1 (sec)	142.3	145.3	161.9	163	184.6	211.4
	Trial 2 (sec)	141.9	145.9	161.5	164.2	184	211.2
	Trial 3 (sec)	142.3	146.6	161.5	165.5	184.8	211.5

Now you see that the legend has Group 1 properly displayed and a second series is added, but it just hasn't been properly defined. Rename it "Group 2" and then click on the "X values" icon over to the right.



		Toluene (solvent)	Polymer 1	Polymer 2	Polymer 3	Polymer 4	Polymer 5
	Molecular Weight (g/mol)	N/A	3,000	13,000	25,000	50,000	90,000
Group 1: Efflux time vs MW	Trial 1 (sec)	156.5	173.7	177.9	185.9	203.3	237.8
	Trial 2 (sec)	157.8	166.7	177.1		203.5	235.5
	Trial 3 (sec)	157	168.9	177		202.5	243.5
Group 2: Efflux time vs MW	Trial 1 (sec)	194.37	204.37	205.42	226.77	247.08	294.22
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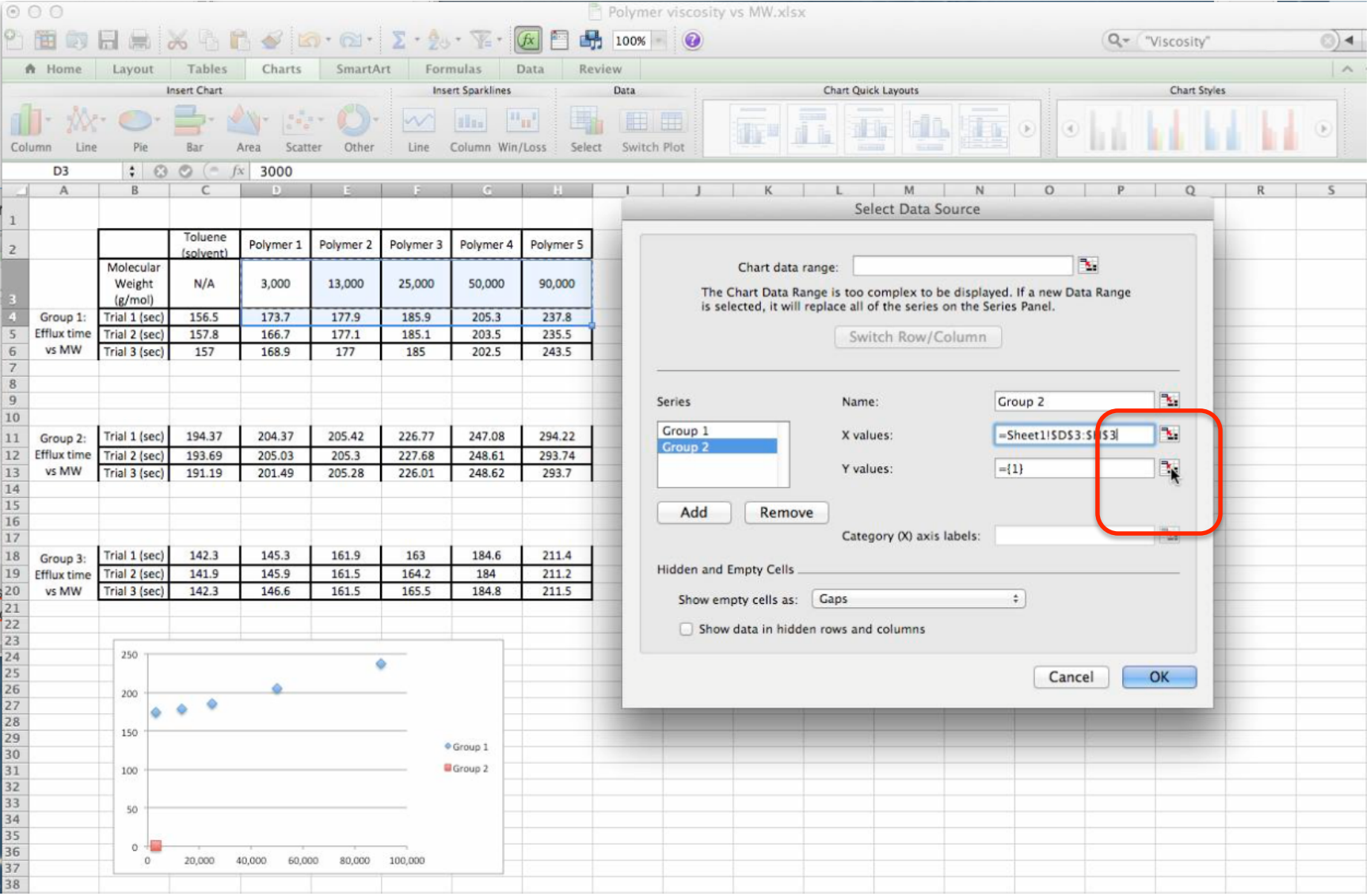
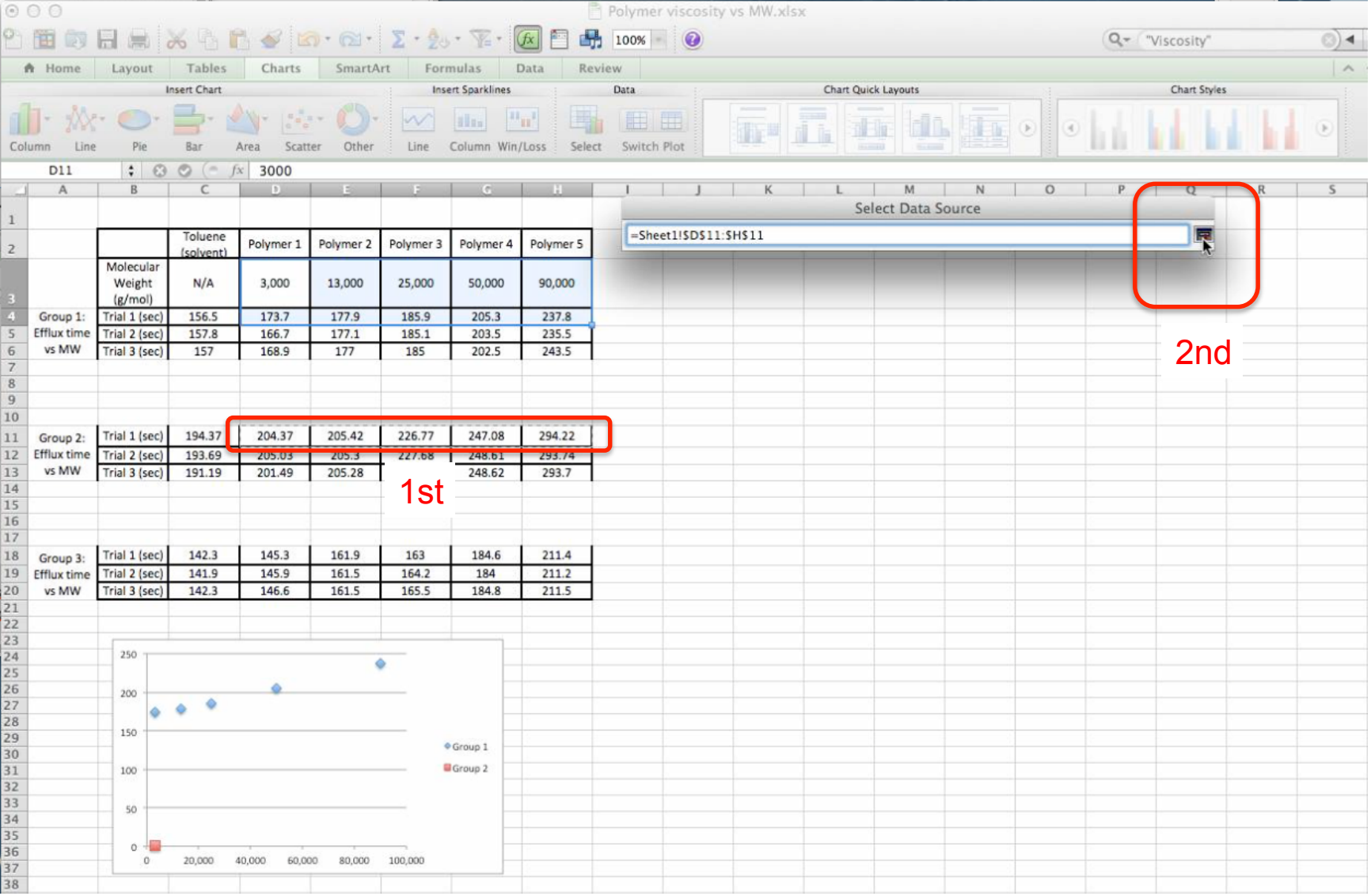
Group 3: Efflux time vs MW	Trial 1 (sec)	142.3	145.3	161.9	163	184.6	211.4
	Trial 2 (sec)	141.9	145.9	161.5	164.2	184	211.2
	Trial 3 (sec)	142.3	146.6	161.5	165.5	184.8	211.5

Now highlight the cells that you want to insert as your x values and then click on the icon that you see to the right.

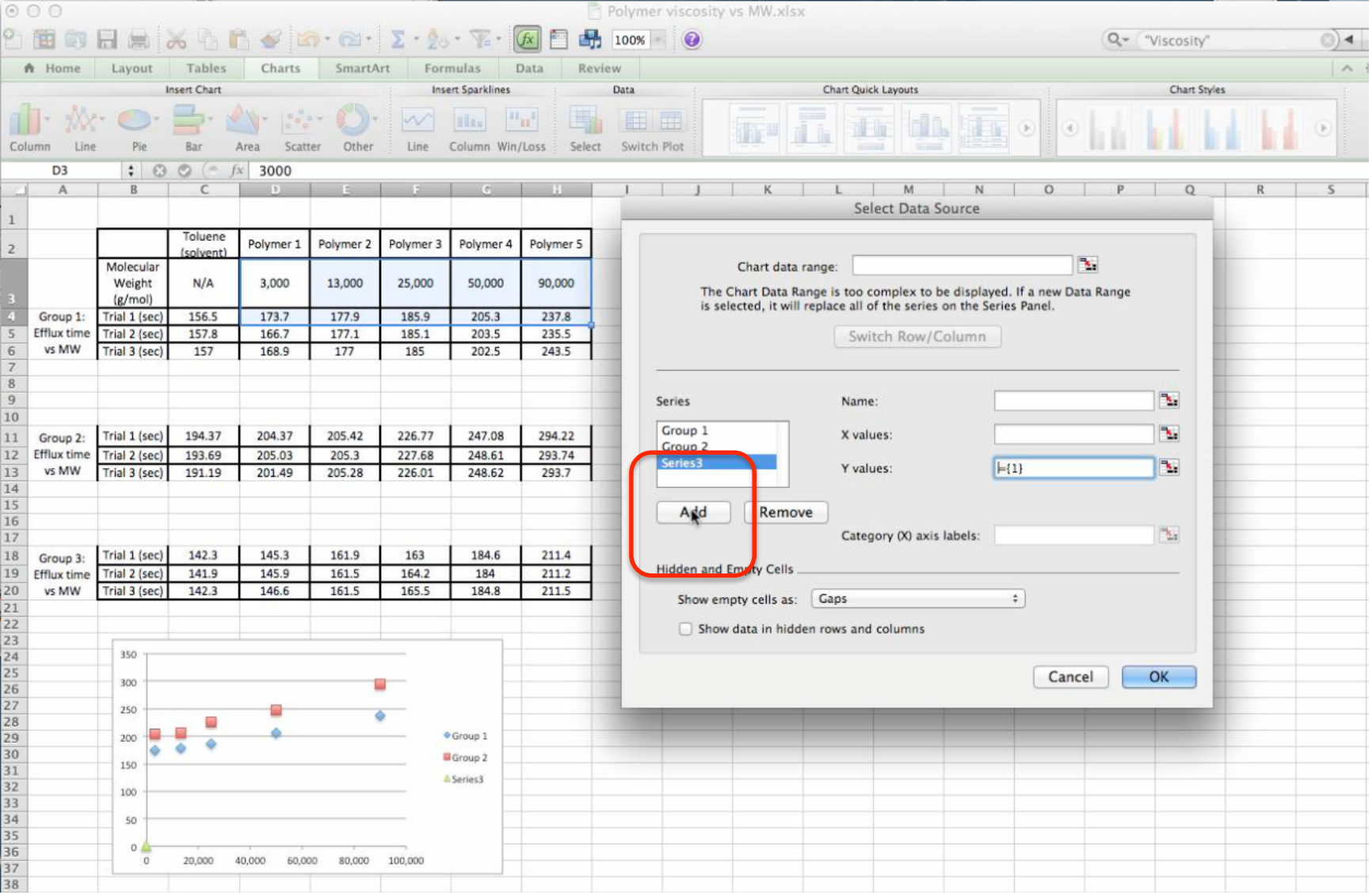


Click on the “Y values” icon over on the right.

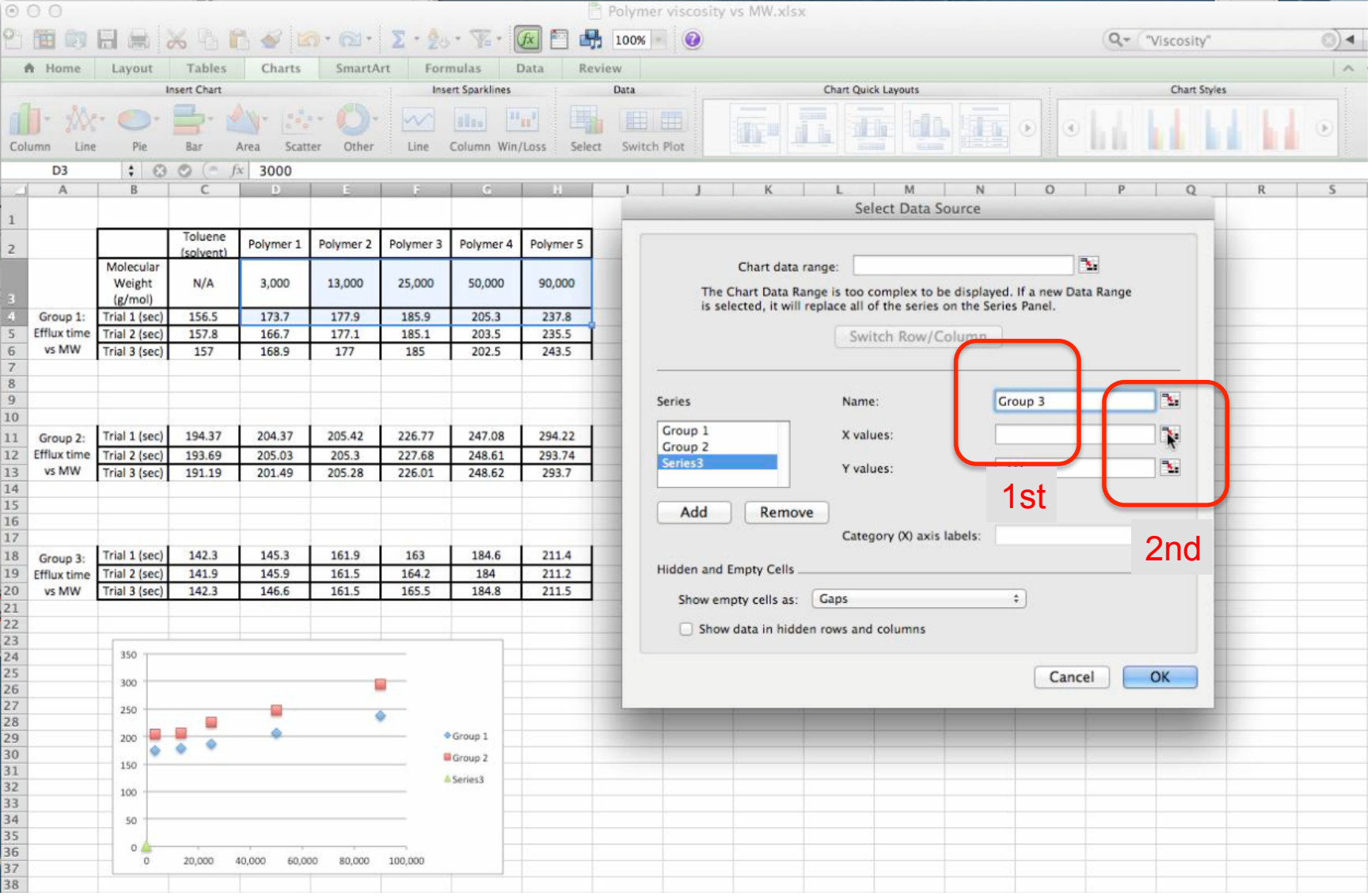


		Toluene (solvent)	Polymer 1	Polymer 2	Polymer 3	Polymer 4	Polymer 5
	Molecular Weight (g/mol)	N/A	3,000	13,000	25,000	50,000	90,000
Group 1: Efflux time vs MW	Trial 1 (sec)	156.5	173.7	177.9	185.9	205.3	237.8
	Trial 2 (sec)	157.8	166.7	177.1	185.1	203.5	235.5
	Trial 3 (sec)	157	168.9	177	185	202.5	243.5
Group 2: Efflux time vs MW	Trial 1 (sec)	194.37	204.37	205.42	226.77	247.08	294.22
	Trial 2 (sec)	193.69	205.03	205.3	227.68	248.61	293.74
	Trial 3 (sec)	191.19	201.49	205.28		248.62	293.7
Group 3: Efflux time vs MW	Trial 1 (sec)	142.3	145.3	161.9	163	184.6	211.4
	Trial 2 (sec)	141.9	145.9	161.5	164.2	184	211.2
	Trial 3 (sec)	142.3	146.6	161.5	165.5	184.8	211.5

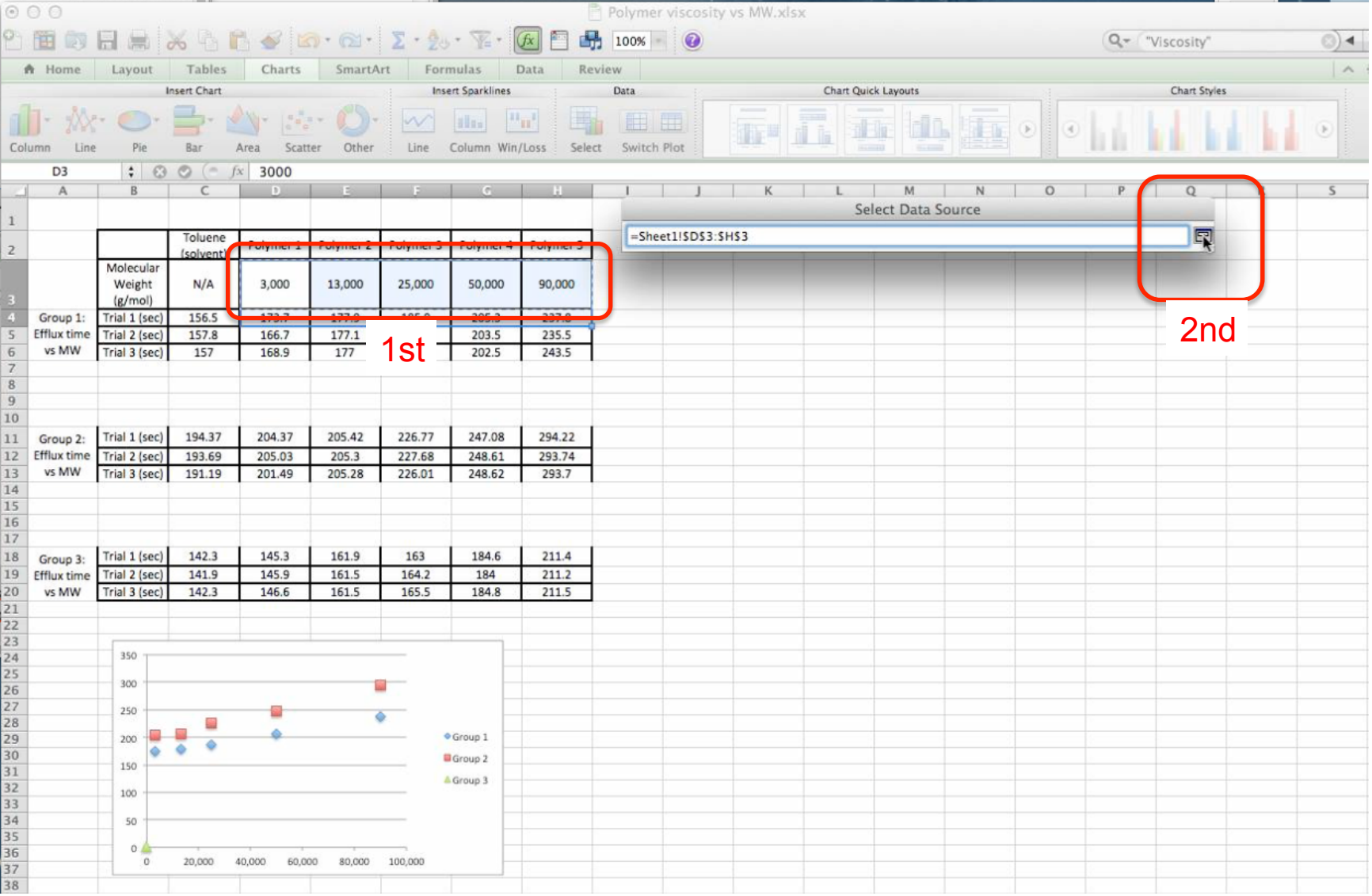
Highlight the cells that you want to use as the y values. In this case we want the efflux times for Group 2, Trial 1. Then click on the icon on the right.



Notice that your plot now has the 2nd series added. You will now add the 3rd series. Click on the “Add” icon.

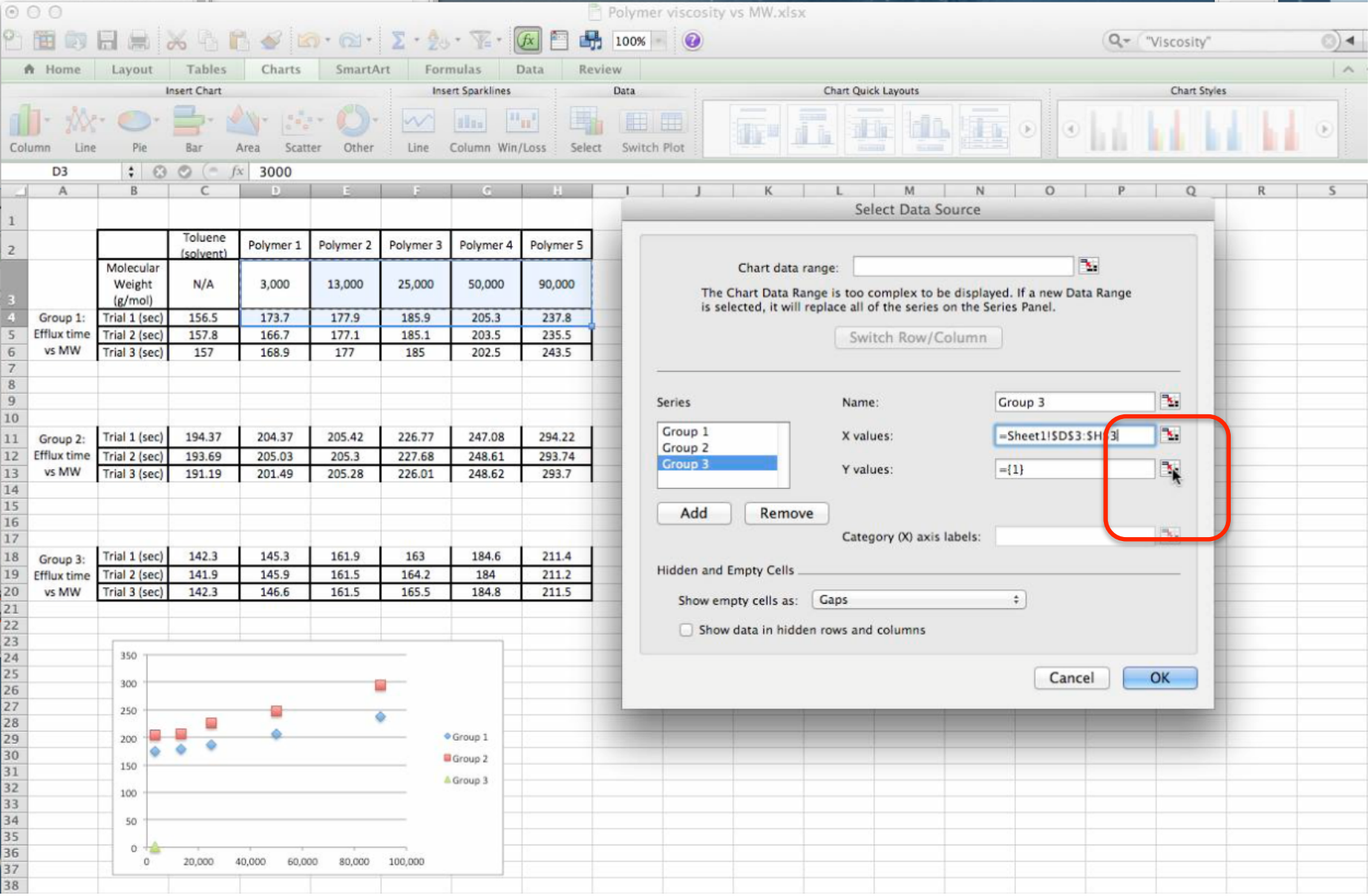


Let’s rename it “Group 3”, then click on the “X values” icon on the right.

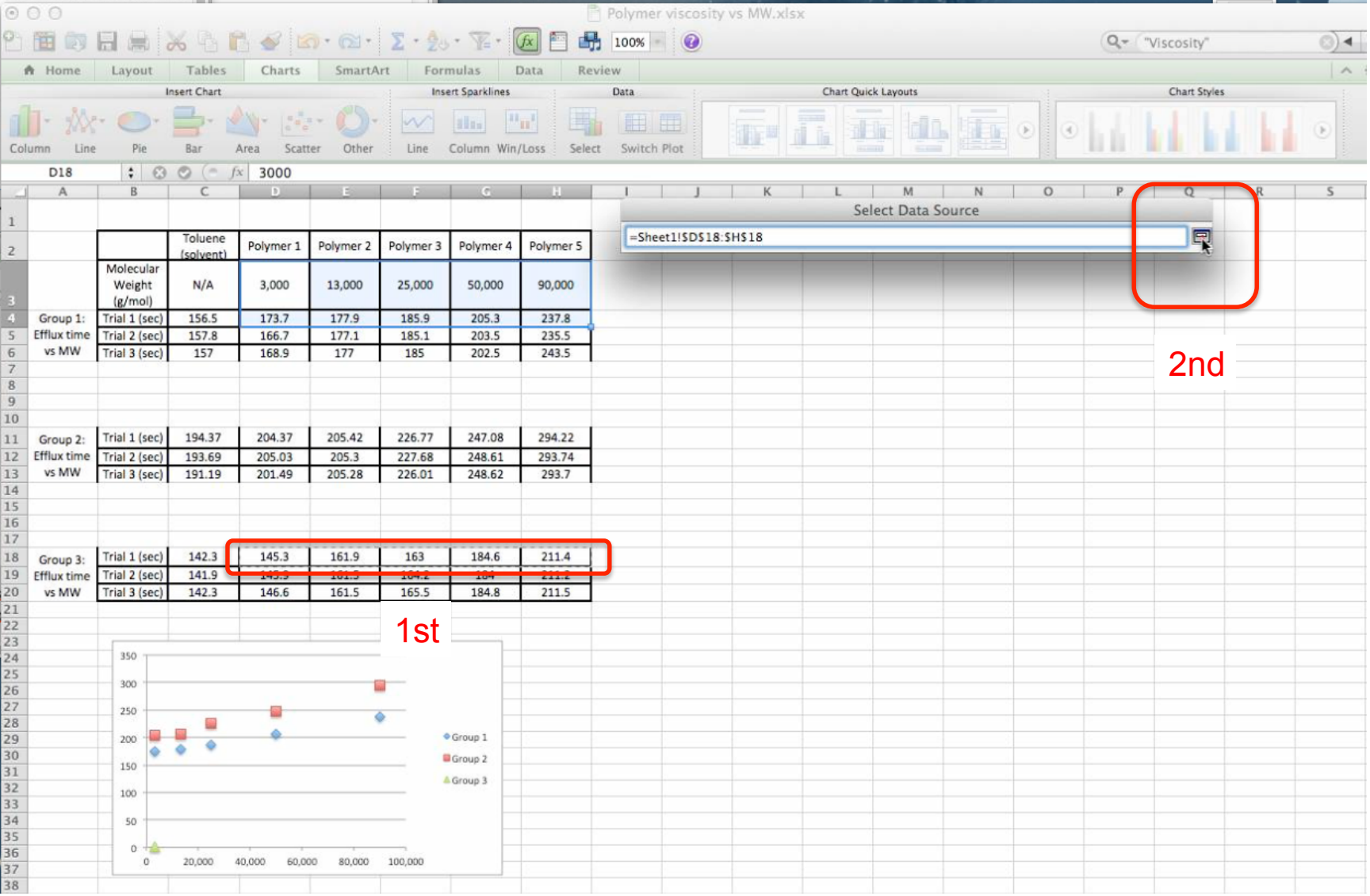


		Toluene (solvent)	Polymer 1	Polymer 2	Polymer 3	Polymer 4	Polymer 5
	Molecular Weight (g/mol)	N/A	3,000	13,000	25,000	50,000	90,000
Group 1: Efflux time vs MW	Trial 1 (sec)	156.5	[illegible]	[illegible]	[illegible]	205.3	237.8
	Trial 2 (sec)	157.8	166.7	177.1		203.5	235.5
	Trial 3 (sec)	157	168.9	177		202.5	243.5
Group 2: Efflux time vs MW	Trial 1 (sec)	194.37	204.37	205.42	226.77	247.08	294.22
	Trial 2 (sec)	193.69	205.03	205.3	227.68	248.61	293.74
	Trial 3 (sec)	191.19	201.49	205.28	226.01	248.62	293.7
Group 3: Efflux time vs MW	Trial 1 (sec)	142.3	145.3	161.9	163	184.6	211.4
	Trial 2 (sec)	141.9	145.9	161.5	164.2	184	211.2
	Trial 3 (sec)	142.3	146.6	161.5	165.5	184.8	211.5

Highlight the Molecular weight cells as you have done previously. Then click on the x values icon on the right.



Click on the “Y values” icon on the right.



		Toluene (solvent)	Polymer 1	Polymer 2	Polymer 3	Polymer 4	Polymer 5
	Molecular Weight (g/mol)	N/A	3,000	13,000	25,000	50,000	90,000
Group 1: Efflux time vs MW	Trial 1 (sec)	156.5	173.7	177.9	185.9	205.3	237.8
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	Trial 3 (sec)	157	168.9	177	185	202.5	243.5
Group 2: Efflux time vs MW	Trial 1 (sec)	194.37	204.37	205.42	226.77	247.08	294.22
	Trial 2 (sec)	193.69	205.03	205.3	227.68	248.61	293.74
	Trial 3 (sec)	191.19	201.49	205.28	226.01	248.62	293.7
Group 3: Efflux time vs MW	Trial 1 (sec)	142.3	145.3	161.9	163	184.6	211.4
	Trial 2 (sec)	141.9	143.9	161.3	164.2	184	211.2
	Trial 3 (sec)	142.3	146.6	161.5	165.5	184.8	211.5

Highlight the y values, in this case you want the efflux times of Group 3, Trial 1. Then click on the y values icon on the right.

Polymer viscosity vs MW.xlsx

Home | Layout | Tables | Charts | Chart Layout | Format | SmartArt | Formulas | Data | Review

Current Selection: Vertical (Value) Axis — Format Selection

Labels: Chart Title, Axis Titles, Legend, Data Labels, Data Table

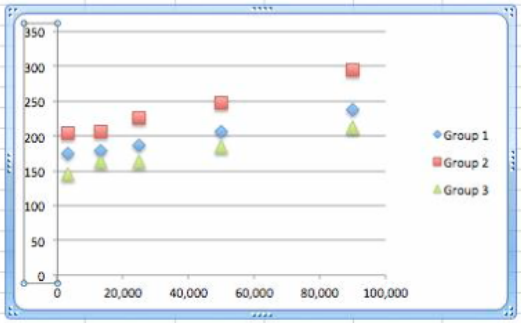
Axes: Axes, Gridlines

Analysis: Trendline, Lines, Up/Down Bars, Error Bars

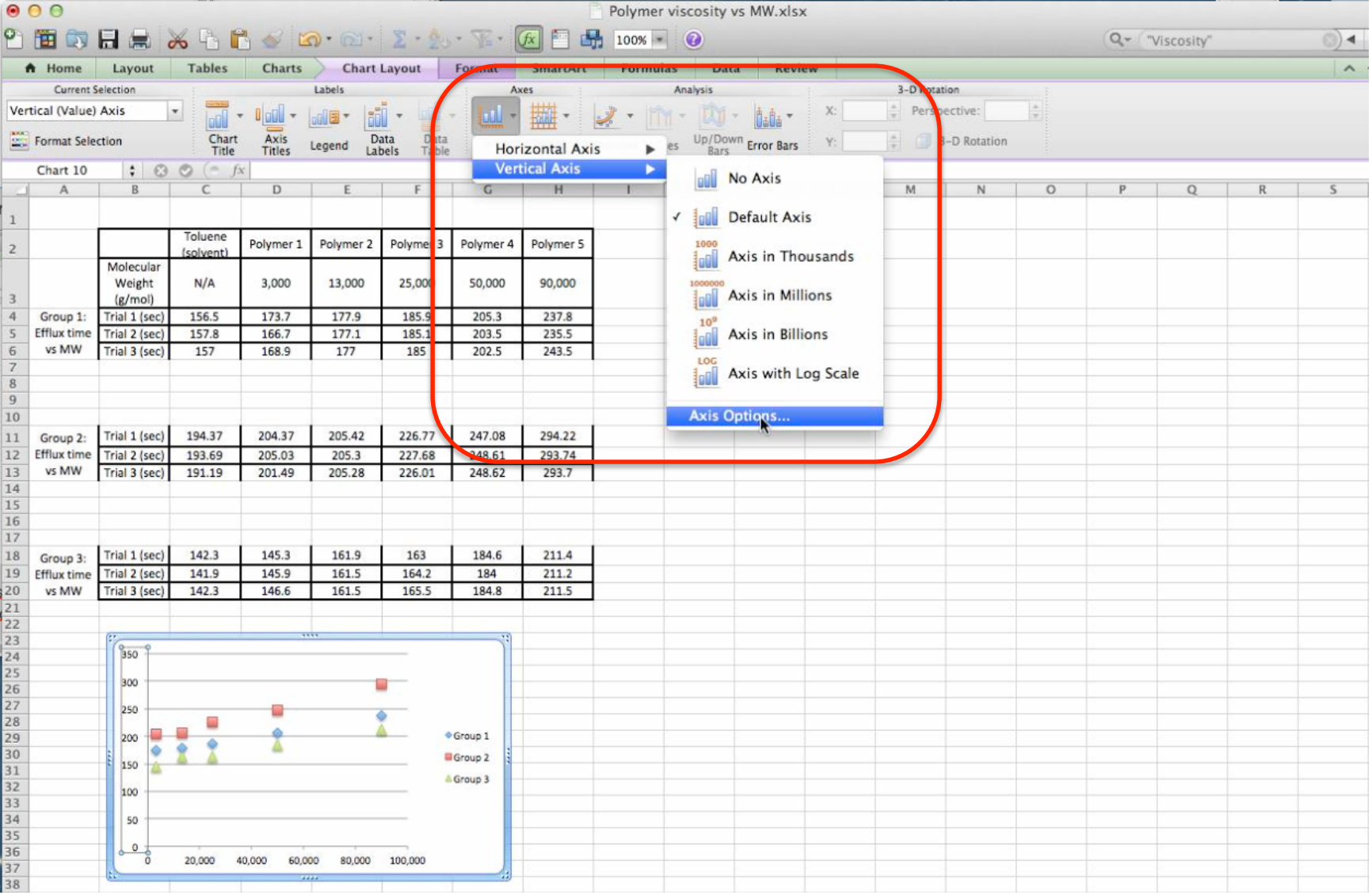
3-D Rotation: X:, Y:, Perspective:, 3-D Rotation

Chart 10

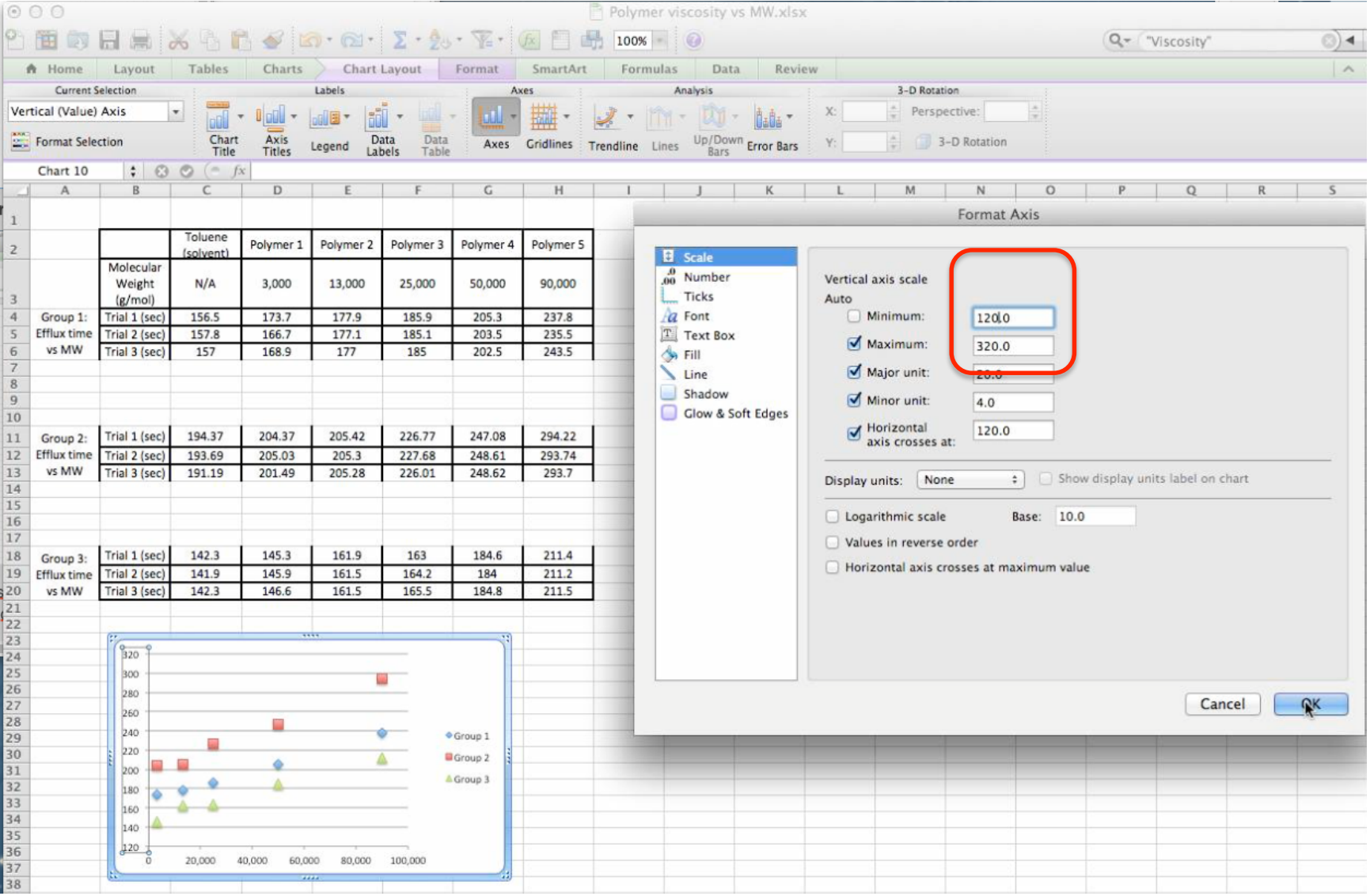
		Toluene (solvent)	Polymer 1	Polymer 2	Polymer 3	Polymer 4	Polymer 5
	Molecular Weight (g/mol)	N/A	3,000	13,000	25,000	50,000	90,000
Group 1: Efflux time vs MW	Trial 1 (sec)	156.5	173.7	177.9	185.9	205.3	237.8
	Trial 2 (sec)	157.8	166.7	177.1	185.1	203.5	235.5
	Trial 3 (sec)	157	168.9	177	185	202.5	243.5
Group 2: Efflux time vs MW	Trial 1 (sec)	194.37	204.37	205.42	226.77	247.08	294.22
	Trial 2 (sec)	193.69	205.03	205.3	227.68	248.61	293.74
	Trial 3 (sec)	191.19	201.49	205.28	226.01	248.62	293.7
Group 3: Efflux time vs MW	Trial 1 (sec)	142.3	145.3	161.9	163	184.6	211.4
	Trial 2 (sec)	141.9	145.9	161.5	164.2	184	211.2
	Trial 3 (sec)	142.3	146.6	161.5	165.5	184.8	211.5



Notice that all three groups' data are now on the plot and identified in the legend with colors and shapes, Group 1, Group 2, and Group 3. But let's trim off some of the y-axis that isn't being used. The minimum y value appears to be around 120. So we'll trim off anything below 120.



In the “Chart Layout” thumbnail you will see the “Axes” icon. Click on it and trace your way down “Vertical Axis”, to “Axis Options...”. Click on “Axis Options...”



		Toluene (solvent)	Polymer 1	Polymer 2	Polymer 3	Polymer 4	Polymer 5
	Molecular Weight (g/mol)	N/A	3,000	13,000	25,000	50,000	90,000
Group 1: Efflux time vs MW	Trial 1 (sec)	156.5	173.7	177.9	185.9	205.3	237.8
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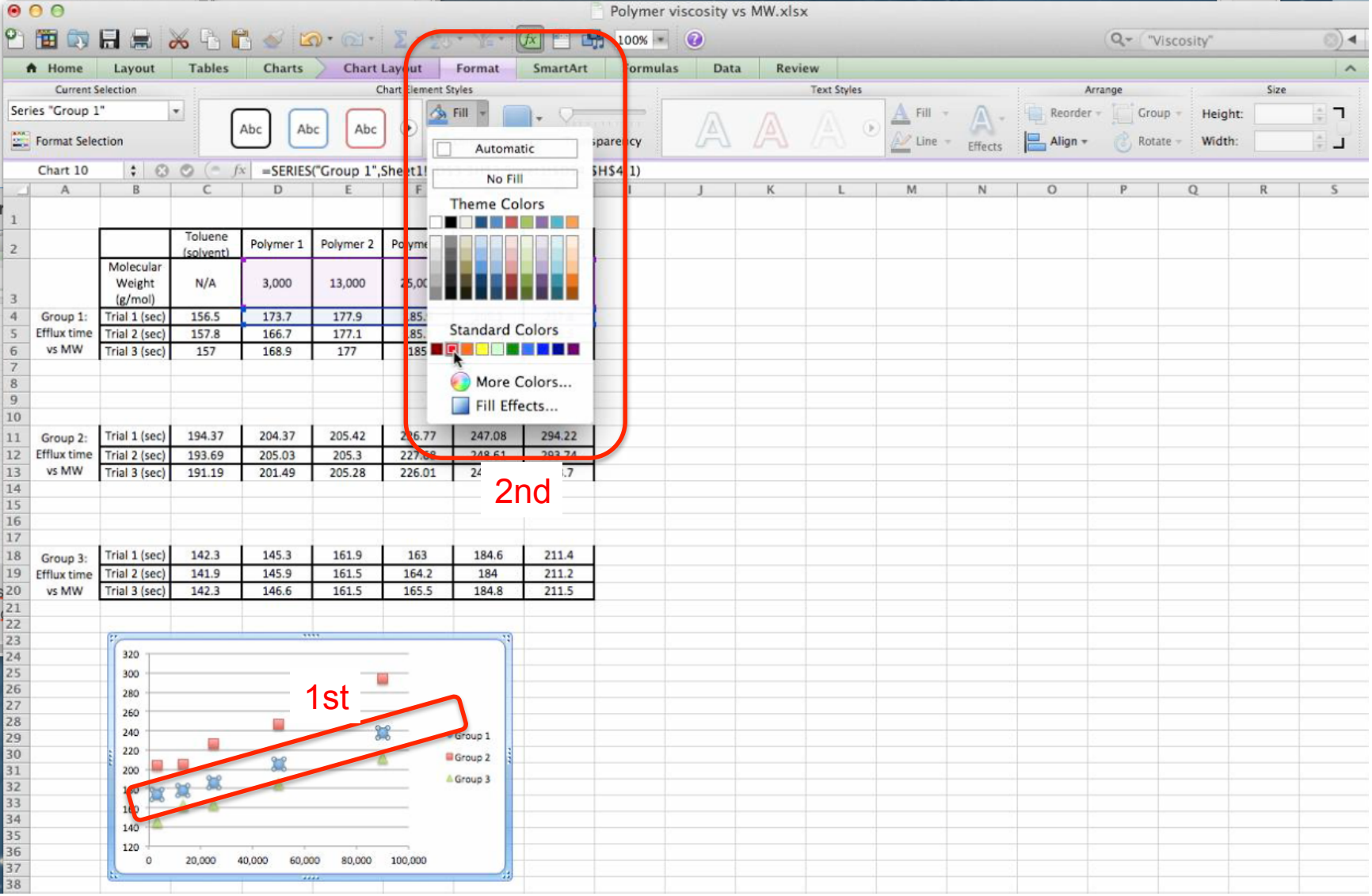
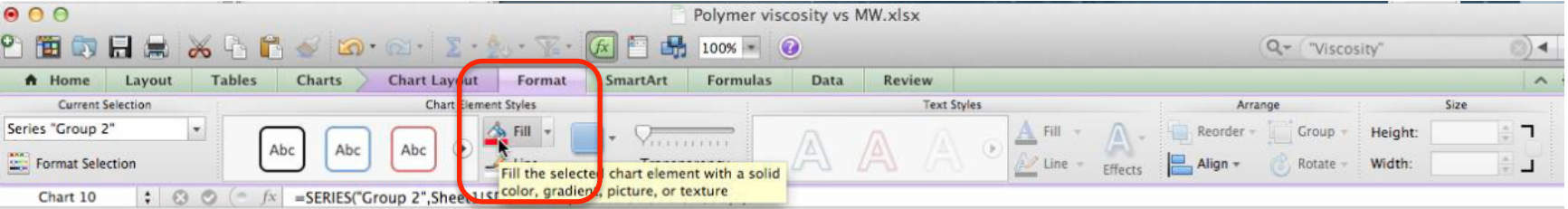
Group 2: Efflux time vs MW	Trial 1 (sec)	194.37	204.37	205.42	226.77	247.08	294.22
	Trial 2 (sec)	193.69	205.03	205.3	227.68	248.61	293.74
	Trial 3 (sec)	191.19	201.49	205.28	226.01	248.62	293.7
Group 3: Efflux time vs MW	Trial 1 (sec)	142.3	145.3	161.9	163	184.6	211.4
	Trial 2 (sec)	141.9	145.9	161.5	164.2	184	211.2
	Trial 3 (sec)	142.3	146.6	161.5	165.5	184.8	211.5

The “Format Axis” window opens up. Make sure “Scale” is selected and then change the minimum Y value to “1200”. Click OK. Notice how the un-used portion of the y-axis has been trimmed off.



If you want to change the color of the marker, click on one of them. Then go to the “Format” thumbnail, find the “Fill” icon, click on the drop down arrow, and an options window will open. Select whatever color you wish. In this example the blue diamonds will be changed to red.



		Toluene (solvent)	Polymer 1	Polymer 2	Polymer 3	Polymer 4	Polymer 5
	Molecular Weight (g/mol)	N/A	3,000	13,000	25,000	50,000	90,000
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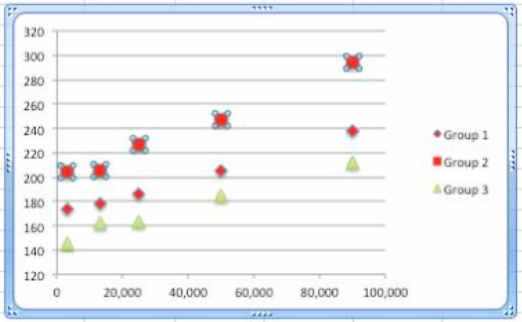
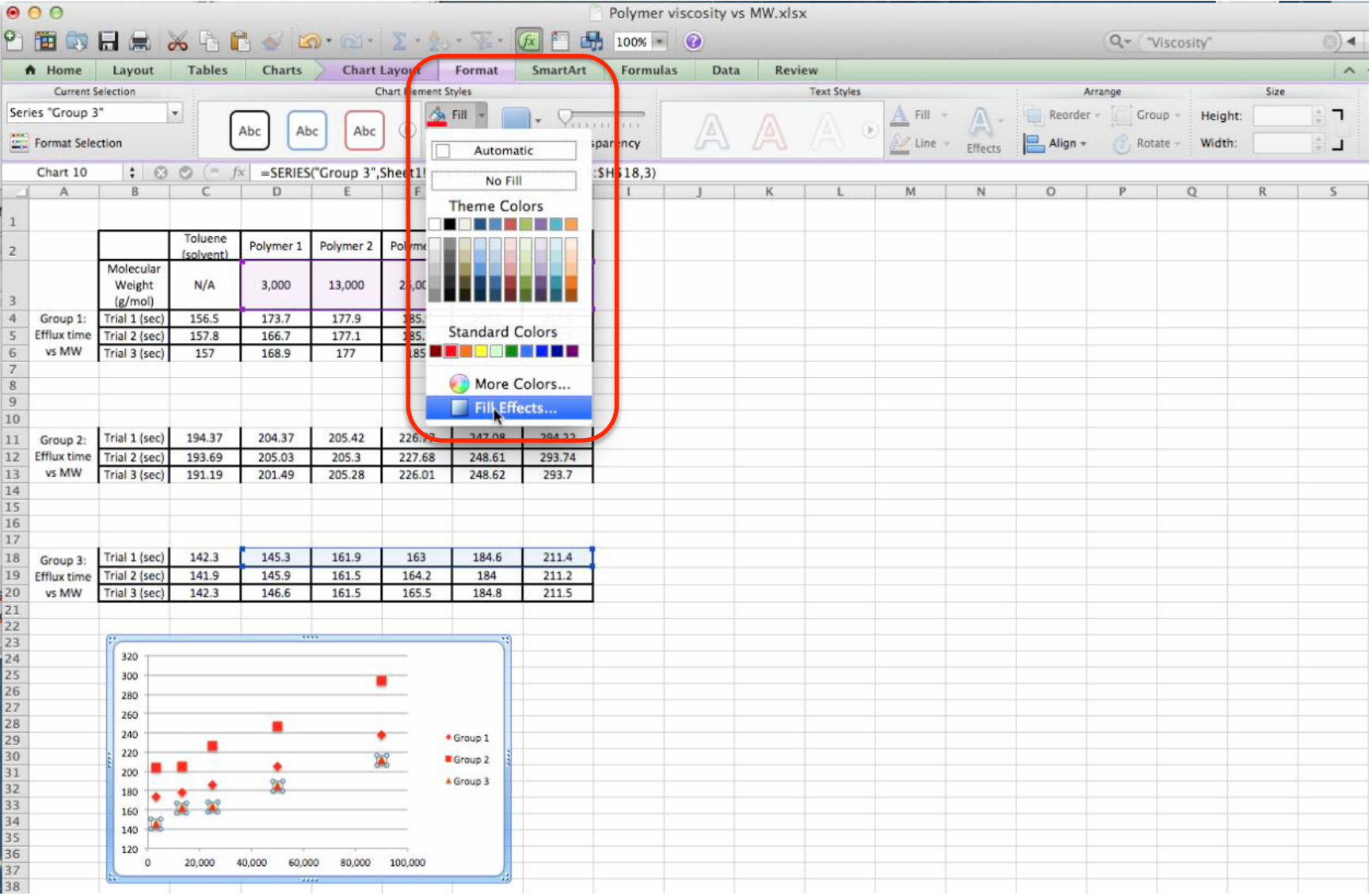
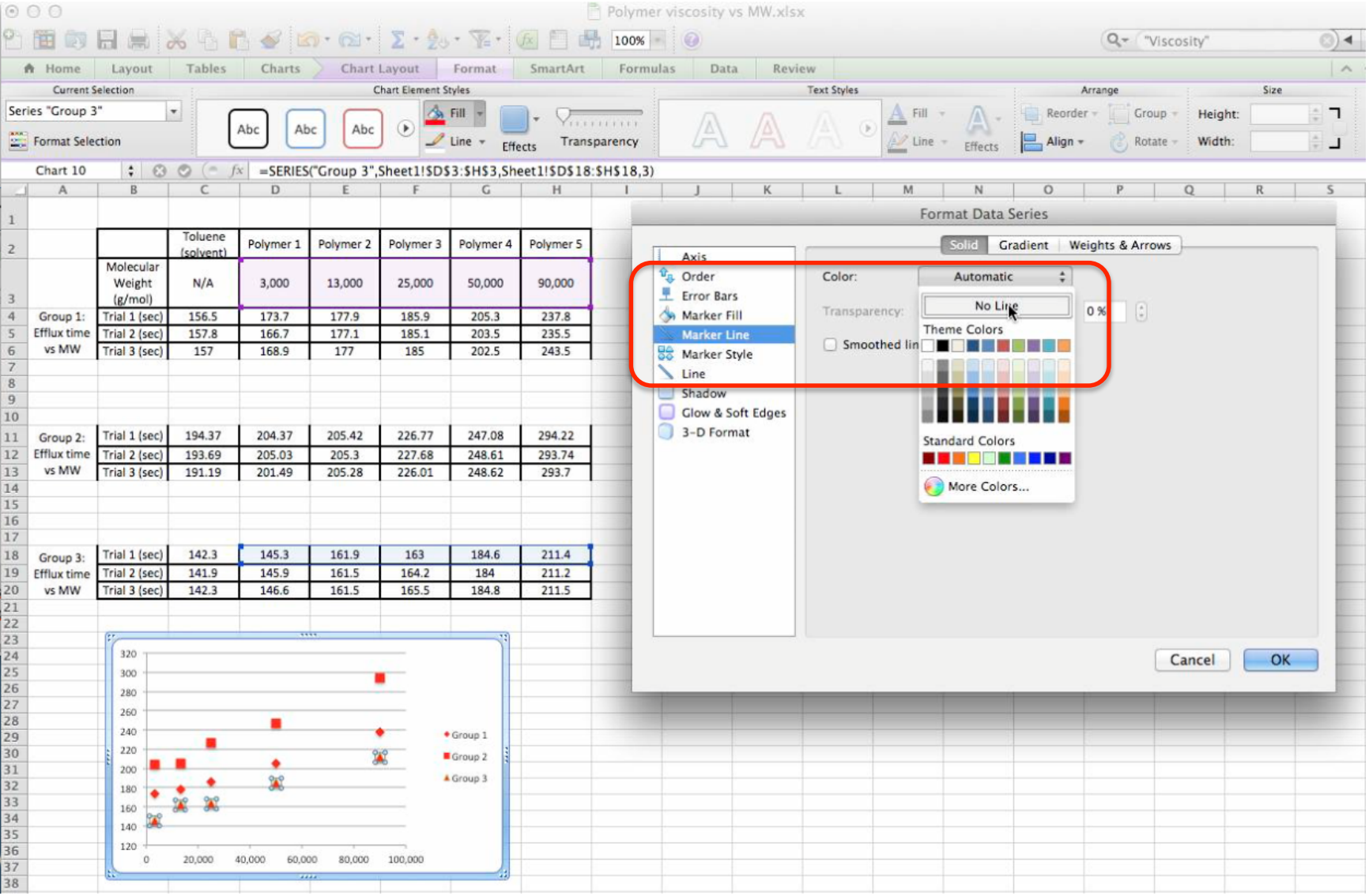
	Trial 3 (sec)	142.3	146.6	161.5	165.5	184.8	211.5



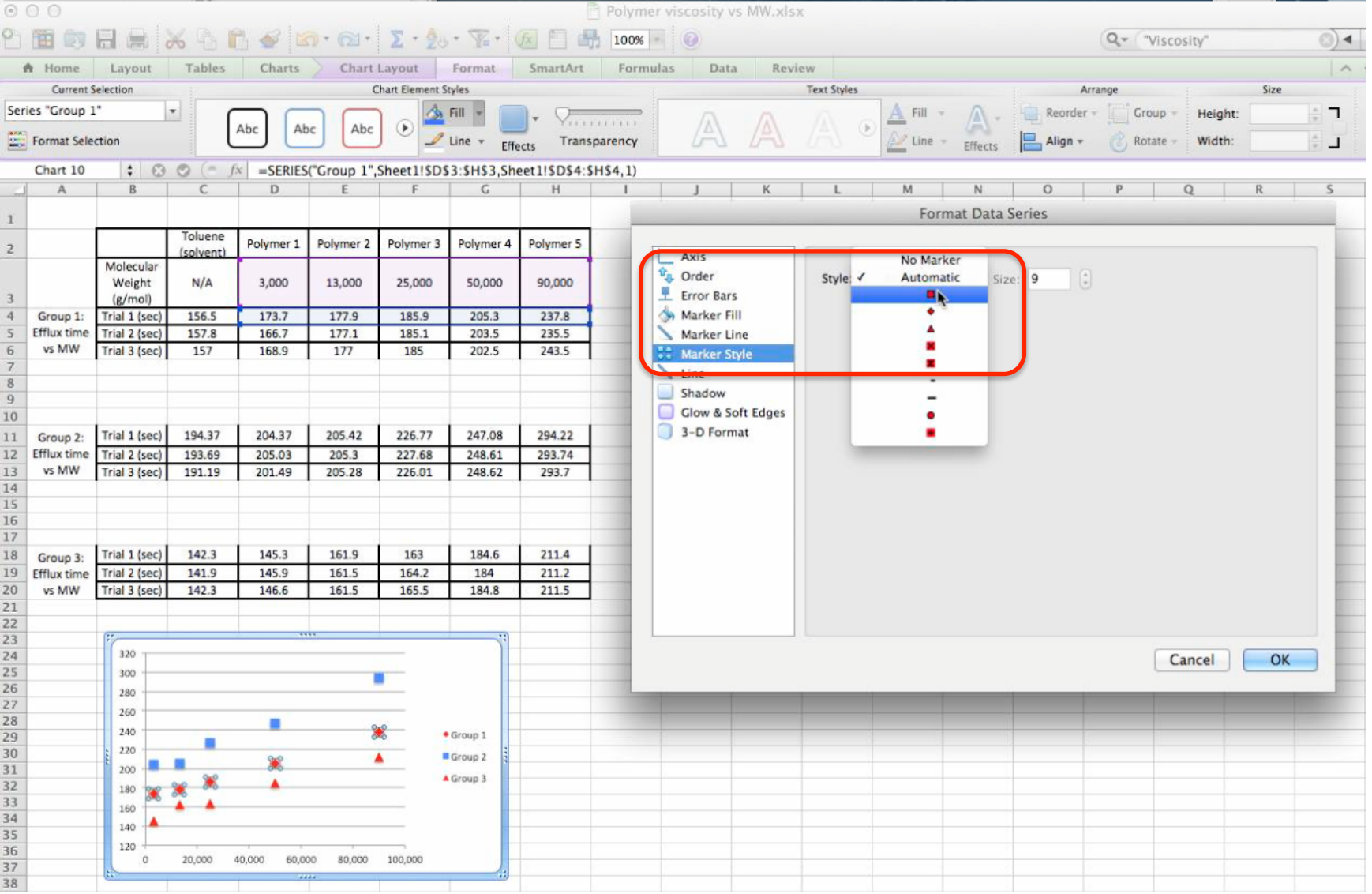
The red squares are changed to a darker red that matches the diamonds. Just click on the red bucket “Fill” icon.



The green triangles were changed to the same color of red. Furthermore, each marker has an outline around it. You can change that effect. In the “Fill” drop down menu, “Fill Effects....” was selected.



In this example, “Marker Line” is selected, the outline around the marker is changed to “No Line”. The outline should disappear.



		Toluene (solvent)	Polymer 1	Polymer 2	Polymer 3	Polymer 4	Polymer 5
	Molecular Weight (g/mol)	N/A	3,000	13,000	25,000	50,000	90,000
Group 1: Efflux time vs MW	Trial 1 (sec)	156.5	173.7	177.9	185.9	205.3	237.8
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	Trial 3 (sec)	157	168.9	177	185	202.5	243.5
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	Trial 2 (sec)	193.69	205.03	205.3	227.68	248.61	293.74
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Group 3: Efflux time vs MW	Trial 1 (sec)	142.3	145.3	161.9	163	184.6	211.4
	Trial 2 (sec)	141.9	145.9	161.5	164.2	184	211.2
	Trial 3 (sec)	142.3	146.6	161.5	165.5	184.8	211.5

Suppose you want all of the markers to be the same shape, but different colors, as seen in Figure 2.2 at the beginning of the Overlay Section. Change your squares to blue. Click on a red diamond and let's change it to a red square. You should already know how to change the color of it, let's change it to a square. Go to the "Fill" drop down menu, highlight "Marker style", then select the square shape.

Polymer viscosity vs MW.xlsx

		Toluene (solvent)	Polymer 1	Polymer 2	Polymer 3	Polymer 4	Polymer 5
	Molecular Weight (g/mol)	N/A	3,000	13,000	25,000	50,000	90,000
Group 1: Efflux time vs MW	Trial 1 (sec)	156.5	173.7	177.9	185.9	205.3	237.8
	Trial 2 (sec)	157.8	166.7	177.1	185.1	203.5	235.5
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Group 2: Efflux time vs MW	Trial 1 (sec)	194.37	204.37	205.42	226.77	247.08	294.22
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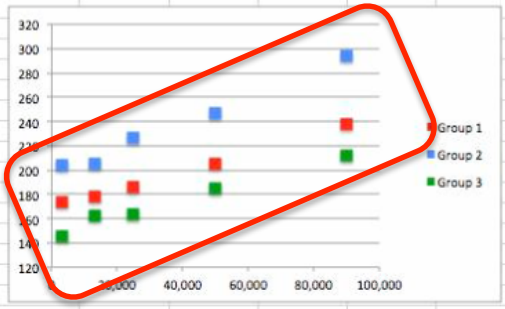
	Trial 2 (sec)	141.9	145.9	161.5	164.2	184	211.2
	Trial 3 (sec)	142.3	146.6	161.5	165.5	184.8	211.5



Lastly, the red triangles are changed to green squares. Although all of these colors look great on a computer screen, it could be irrelevant when it comes to printing. Do you have a color printer? If not, then all you'll get is varying shades of gray for each type of marker that may be indistinguishable.