



Excel Template Use Instructions

Welcome to the Toxi-ChromoPlate Excel Template User Instructions. Following the simple steps outlined below, you will be able to quickly enter your experimental results and have it analyzed in seconds, providing a quick and easy way to obtain results.

To begin entering data, open the Toxi-ChromoPlate Excel Template file located in the Toxi-ChromoTest folder on the CD-ROM included in your kit. Also included in this folder is a file entitled “Toxi-ChromoTest Complete Example”, which serves as an additional reference for proper data entry.

Step 1: Enable Macros

In order to be able to have Excel automatically be able to analyze your results, it will have to run a macro written in VBA code (see Step x on how to run the macro).

This is a very simple procedure to perform. The procedure is provided for both Excel 2003 and Excel 2007.

Excel 2003¹:

When the macro security level in Excel is set to **Low** (not recommended), macros can be run without prompting. When macro security is set to **Medium**, Excel displays a dialog box asking if you want to enable macros. When macro security is set to **High** (the recommended macro security setting for all users), Excel allows you to run only those macros that are digitally signed or stored in the Excel startup (XLStart) folder.

¹ See Support/Excel/Excel 2003 Help and How-to/Security and Privacy/Macros and Virus Protection at <http://office.microsoft.com/en-us/excel-help/about-macro-security-HP003084611.aspx?CTT=5&origin=HP010096919> , Microsoft, 2011

Enable an unsigned macro to run

To allow unsigned macros to run, the **Trust all installed add-ins and templates** check box must be selected on the **Trusted Publishers** tab of the **Security** dialog box. This option is selected by default. If it is not selected (recommended), Excel allows you to run only macros that have trusted digital signatures.


1. On the **Tools** menu, point to **Macro**, and then click **Security**.
2. On the **Trusted Publishers** tab, select the **Trust all installed add-ins and templates** check box

Excel 2007:

Microsoft Office Excel allows you to change the macro security settings in order to control which macros run and under what circumstances. The first thing to check is that macros are not entirely disabled, as this will prevent the use of the analytical macro.


You can change macro security settings in the Trust Center, unless a system administrator in your organization has changed the default settings to prevent you from changing the settings.

1. On the **Developer** tab, in the **Code** group, click **Macro Security**.

Tip If the **Developer** tab is not displayed, click the **Microsoft Office Button** , click **Excel Options**, and then in the **Popular** category, under **Top options for working with Excel**, click **Show Developer tab in the Ribbon**.

2. In the **Macro Settings** category, under **Macro Settings**, click the option that you want.

Note Any changes that you make in the **Macro Settings** category in Excel apply only to Excel and do not affect any other Microsoft Office program.

Tip You can also access the Trust Center in the **Excel Options** dialog box. Click the **Microsoft Office Button** , and then click **Excel Options**. In the **Trust Center** category, click **Trust Center Settings**, and then click the **Macro Settings** category.

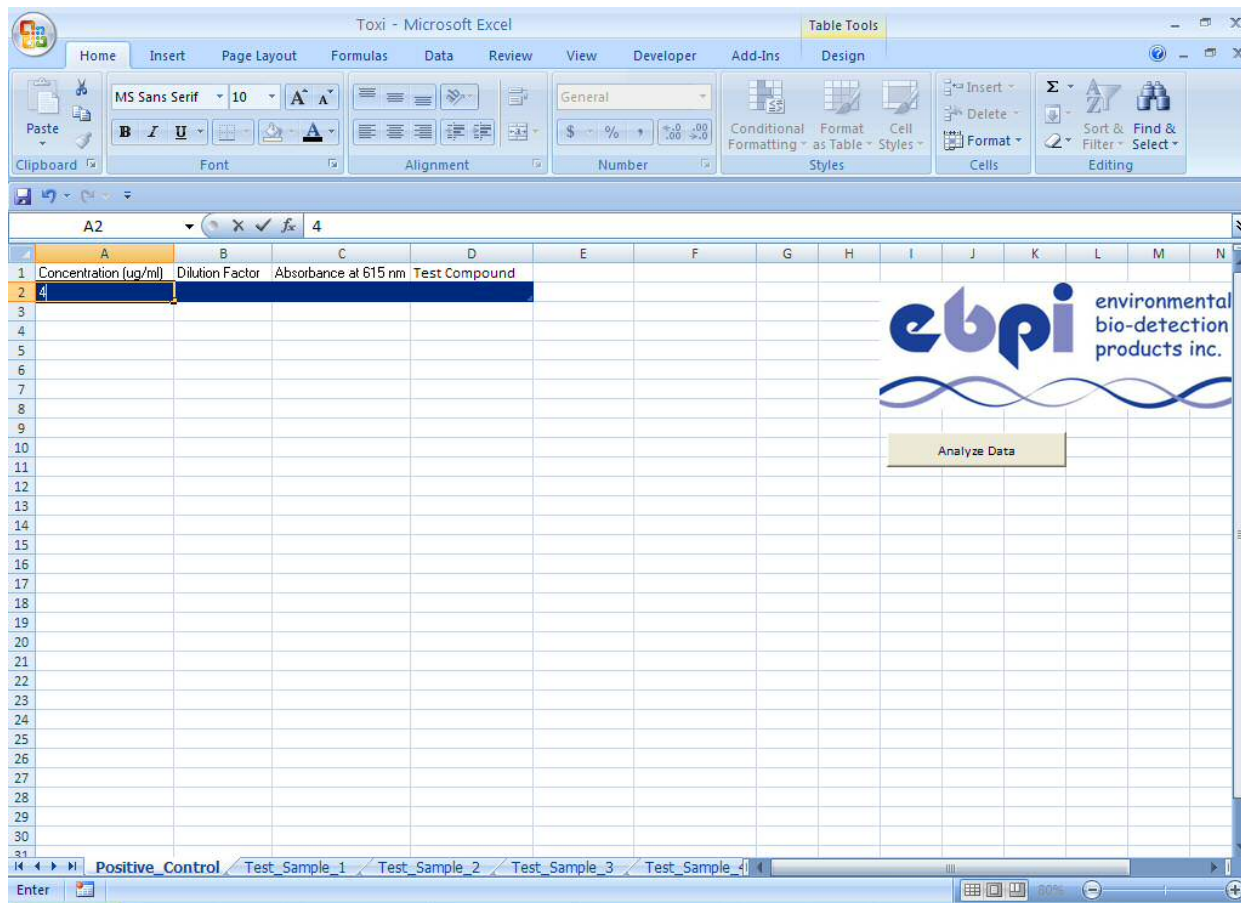
The default macro setting for Excel is “Disable all macros with notification”. This means that Excel will prompt you when spreadsheets have macros, and you can choose whether to trust the source and use the macro, or to ignore it. In this case, you will want to enable macros in order to facilitate data analysis.²

² See Support/Excel/Excel 2007 Help and How-to/Macros at <http://office.microsoft.com/en-us/excel-help/change-macro-security-settings-in-excel-HP010096919.aspx>, Microsoft, 2011

If you changed the macro security settings, you will want to restart Excel in order for the changes to occur. Once the macro security setting is set to “Disable all macros with notification”, a Security warning will appear below the task bar (see picture on next page).

Step 2: Data Entry and Analysis

Below is an image of the template as it appears when you first open the Toxi-ChromoTest template Excel file.



This template allows for entry of up to 6 samples per plate, as well as a positive control. From the image above, you can see that the positive control and each sample are separated onto different worksheets within the Excel file in order to better organize the data.

As the first step in data entry, it is recommended to first fill out the Positive Control worksheet. Simply enter the concentration of the positive control material in Column A, or enter the dilution factor into Column B. It is important to pick either one or the other. It is also important to note that if you are using Dilution Factors for either the positive control or any of the test samples, you must indicate the negative control well by typing the text "Negative" into the appropriate cell. Finally, enter the absorbance for each concentration in Column C. It is also recommended to make a brief note of the test compound used in Column D, especially for the different test samples used.

The screenshot shows a Microsoft Excel spreadsheet titled 'Toxi - Microsoft Excel'. The active worksheet is 'Positive_Control'. The data table is structured as follows:

Concentration (ug/ml)	Dilution Factor	Absorbance at 615 nm	Test Compound
4		0.058	
2		3.000	
1		0.065	
0.5		0.063	
0.25		0.160	
0.125		0.352	
0.0625		0.428	
0		0.416	

The 'Analyze Data' button is located in the lower right quadrant of the worksheet area.

Pictured above is an example Positive Control worksheet where data has been entered for eight different concentrations. As you enter data, the table will automatically expand in order to better organize your data.

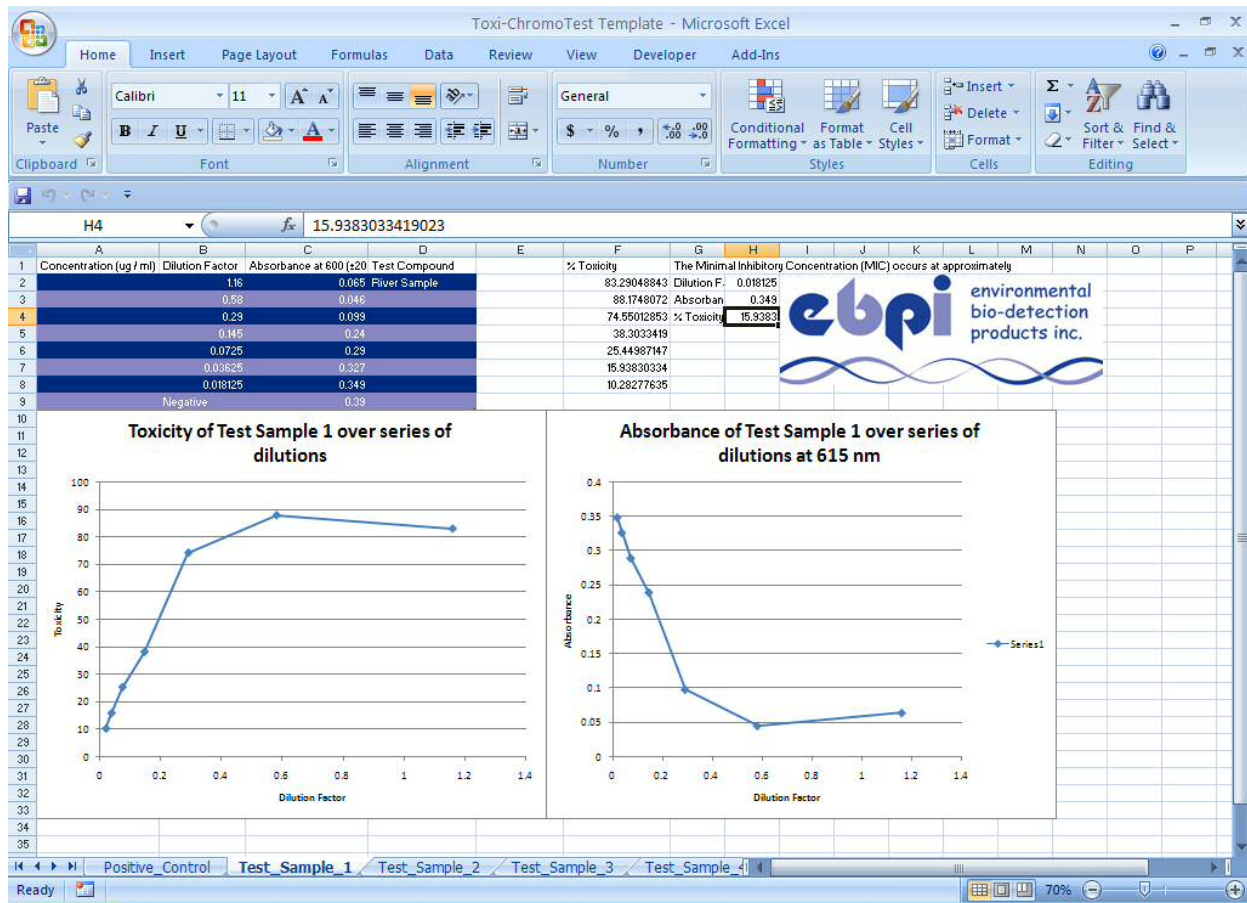
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Concentration (ug / ml)	Dilution Factor	Absorbance at 615 nm	Test Compound										
2		1.16	0.065	River Sample										
3		0.58	0.046											
4		0.29	0.039											
5		0.145	0.24											
6		0.0725	0.29											
7		0.03625	0.327											
8		0.018125	0.349											
9		Negative	0.39											

After the positive control information has been entered, the next step is to enter the concentration and absorbencies for each test sample used, as well as a brief description of the test sample for easy reference.

From the picture above you can see that dilution factors were entered, with “Negative” to indicate the negative control well. This is often useful if the concentration of the compound of interest is unknown in a sample, if you are testing complex mixtures or if you are using the Toxi-ChromoTest as an initial screening tool.

Although there are five worksheets provided for test samples (as per the suggested plate layout in the instruction manual, you may leave some blank if you used less samples, or increased the dilution series.

If you wish to add more samples to the workbook, simply create a new sheet and rename it “Test_Sample_” with the next number in the series appearing as the final character. Then copy and paste data from another worksheet in order to have the same template and have information read into the macro correctly.



Once you have complete data entry for the positive control and your test samples, click on the “Analyze Data” button found just below the EBPI logo on the Positive Control worksheet.

Before the macro runs, a dialog box will open asking you to save your work in order to protect your data. If you do not wish to save the file, simply click cancel.

Once the macro begins, it will calculate the percentage toxicity (as described in the Instruction Manual) for each concentration, as well as generate the Minimal Inhibitory Concentration, that is the concentration that gives 20% toxicity, or the value closest to it for each test sample.

The macro will also generate a chart showing the absorbance over the range of concentrations or dilutions used for both the samples and the positive control. As well, a graph of the percentage toxicity as a function of concentration or dilution will be generated for each test sample.

As a final note, it is recommended that you delete all the charts if you choose to run the macro a second time, as the new charts will simply cover up the old charts, which can eventually lead to a larger draw on system memory, slowing Excel and your computer.

If you have any technical issues with the spreadsheet or further inquiries, please do not hesitate to contact EBPI at sales@biotoxicity.com or by phone at 905-487-7359.