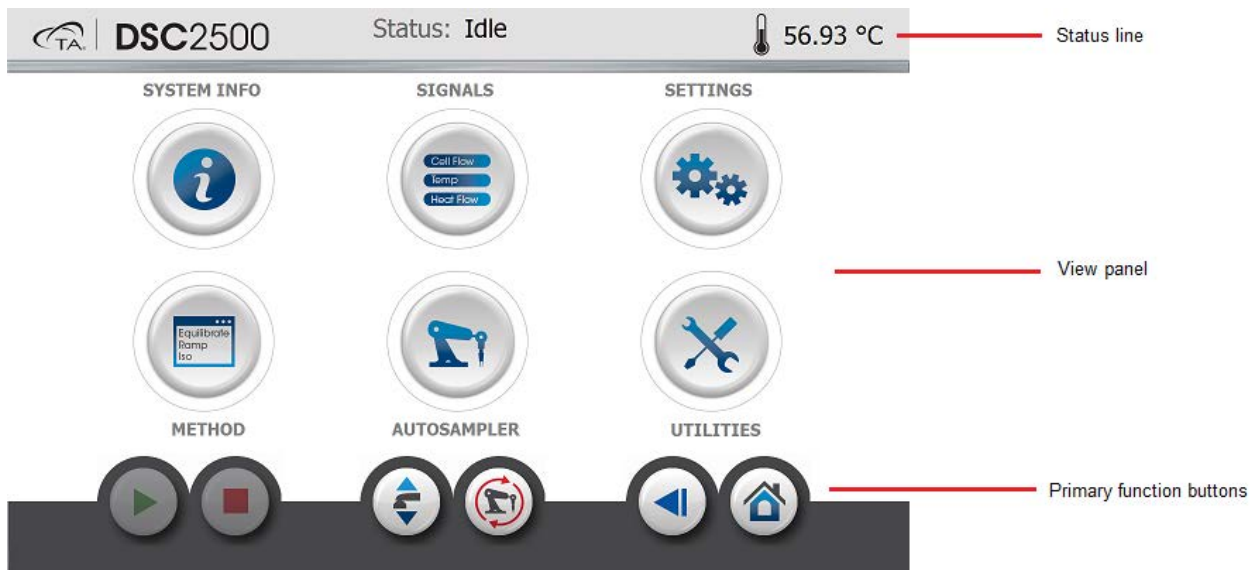All information provided below has been taken from the Help Menu in the Trios Software, which is available for free at https://www.tainstruments.com/support/software-downloads-support/downloads/

You will need to use the instrument touch screen to complete some tasks before getting started with Trios.

The Main Instrument Touch Screen Looks like this:

Using the Touch Screen to Fill the LN2 Dewar

1) Press the Utilities Button:
2) Select LN Pump
3) Slide the Fill setting to On.
    a. The dewar will now fill.
4) To use autofill during your runs, make sure Auto Fill is enabled on this screen.
5) Filling the LN2 Dewar can also be done in Trios and will be covered in the Trios section.

Utilities Button

Using the Touch Screen to Reset the Autosampler

1) Press the Autosampler Button:
2) A graphical representation of the Autosampler tray will come on screen:

Autosampler Button

3) To reset the Autosampler and Lid (needs to be done at the beginning of the week), press the reset button.
   a. Make sure the cell does not contain any pans before resetting.
   b. Reset clears all commands, and instructs the unit to locate the home positions, and returns the Autosampler to the park position. This function also instructs the Autosampler to clear the current sample and reference pan locations.

Reset Autosampler

4) Press the Home button to return to the main menu.
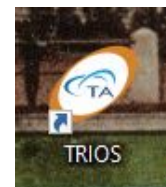5) Reset can also be done in Trios and will be covered in the Trios section.

Home Button

Getting Started with Trios

Opening the Software

1) Use the Trios Icon on the desktop to open the software.
2) Select DSC2500 picture and click connect.
3) The software will open in the Experiments page with the instrument control panel on the right hand side of the page.

Trios Software Icon

Placing your sample and reference pan into the Autosampler tray

The sample/reference tray on the DSC 2500 looks like this:

DSC 2500 Sample/Reference Tray

- Please note the tray does not have R-labeled reference spots. Typical reference spots used are 50-54 and are designated in the software.
- Place your sample into an empty spot in positions 1-49, and your reference pan in an empty position 50-54, making sure you have noted the positions in your notebook or on the sample preparation guide provided at the sample prep station.

Setting up your Experiment in the Trios software

Single Run Form vs. Table View

- The Single Run form provides complete access to all the experimental parameters associated with the run and is used to create a full Procedure.
- The Table View provides a summary of all the runs in a sequence, allowing for a quick review of key parameters and for copying of run information from one experiment to another. In this view, the experimental information can be arranged in a spreadsheet-style table view, with each row representing a single run.

In the Single Run Form, you will enter these parameters in the Sample Box (top segment):

1) Sample Name
2) Sample Pan Number
3) Sample Mass (without the pan)
4) Pan Mass (mass of empty pan and lid)
5) Reference Position (drop down box)

Reference Pan mass is entered under the Edit Tray Configuration Link, which opens the Tray Configuration View:

DSC 2500 Tray Configuration View

- For a reference pan, the sample mass would be zero (it is an empty pan). The Pan mass is the mass of the pan and lid, and you would select the pan type from the drop down menu on the right side of the tray configuration.
- To exit this screen and return to the Experiment View, select Close View.

In the Sample Segment, you will also need to designate your filename and file path where your sample will be saved. (Example: C:\ProgramData\TA Instruments\TRIOS\Data\Your Folder)

Creating your Procedure (second segment)

There are many preset 'Test' options in the Procedure segment. To create a custom procedure:

1) First, select a preloaded test from the 'Test' drop down menu (e.g. Heat Cool Heat)
2) Second, select custom from the same 'Test' drop down menu.
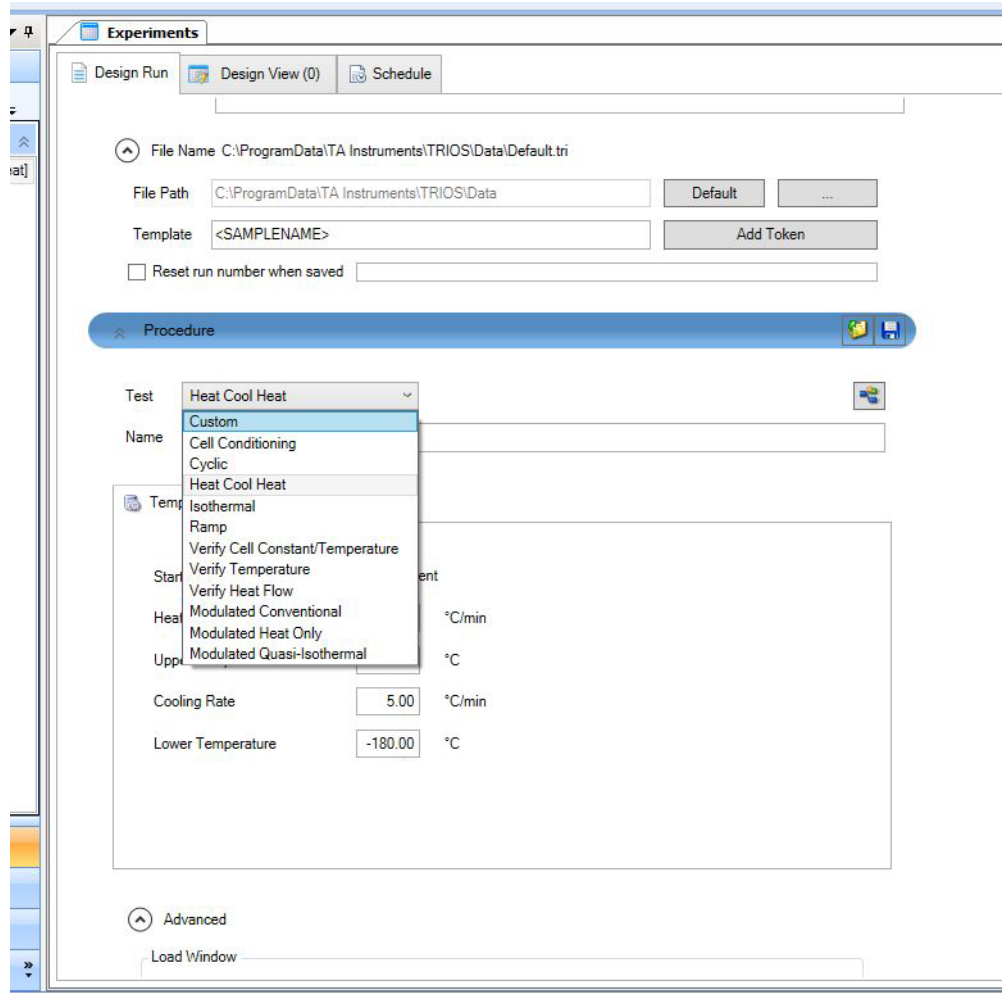
3) You now can edit the experiment by clicking the Edit button.
4) Drag segments from the right side of the screen into the segment list to create the desired procedure.
5) Once you are done, you can save your procedure into your folder with the save button on the upper right portion of the Procedure segment box.
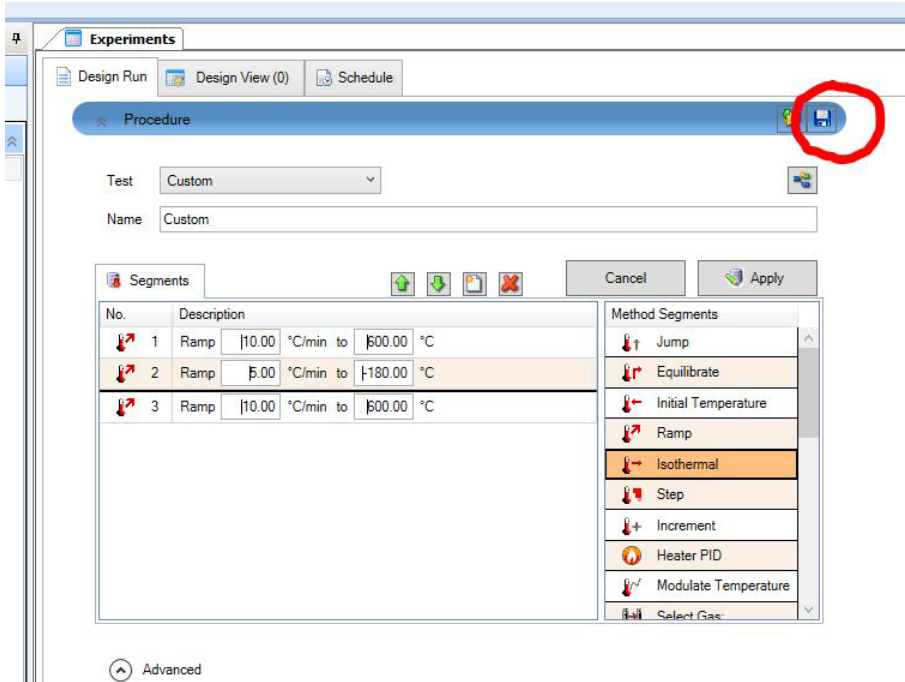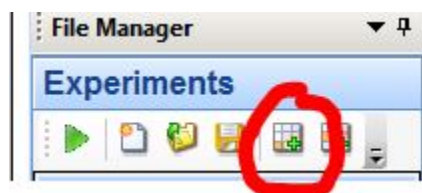
Using Table View

In the Table View, you can add additional samples easily, by adding lines with the append run button. In this view, you can insert sample names, pan and sample masses, as well as copying down procedure names, similarly as you would in Excel.
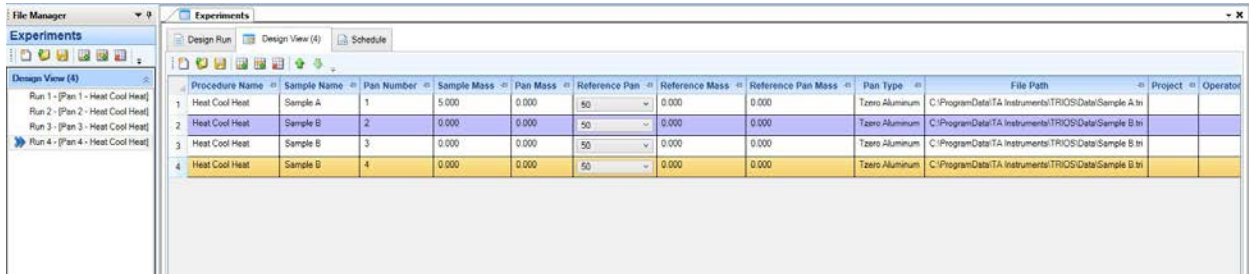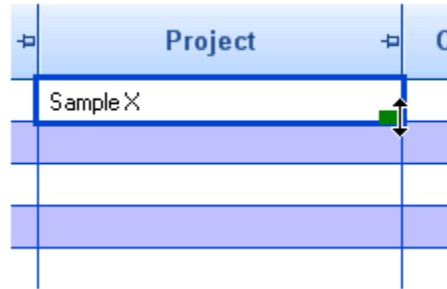

In this view, to add a new sample, you will click on the add button either in the Experiment view or the design view:
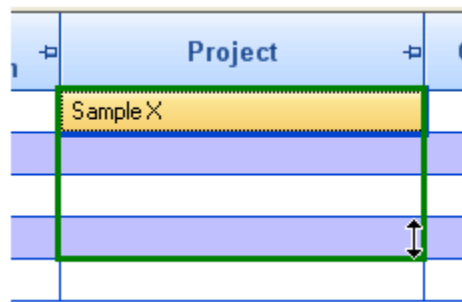

The Table View allows for easily copying parameters from run to run using fill down/up functions.
To copy parameters:

1.   Select the desired parameter (cell) to copy. A green box appears in the lower right corner of the cell.
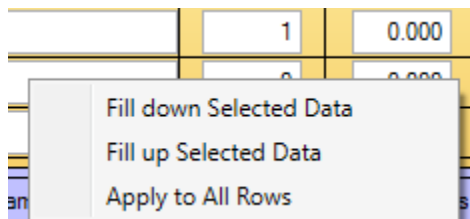
2.   Left-click the green box with the mouse and hold down while dragging the box down, selecting the cells in that column as desired.

3.   Release the mouse when satisfied with the cell range. This same concept can also be applied with more than one column selected.
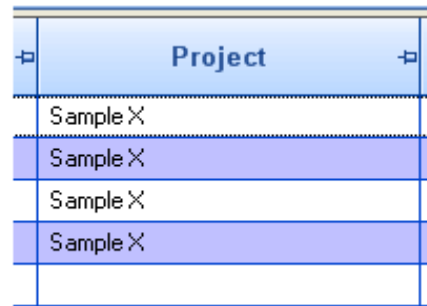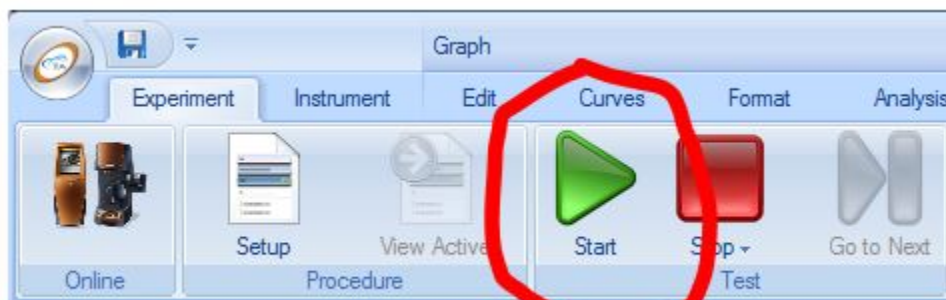
Alternatively, you can also select this option using the right-click pop-up menu.

Starting your Experiment

Once your sequence is complete, you can start the sequence by pressing the green start button at the top of the software:

NOTES:

- The **Start** button is only illuminated when the instrument is in an "Idle" state and the **Experiment** view is displayed.
- Runs are only executed from the **Running Queue** list. Within the File Manager - **Experiments** panel, move the configured runs from the **Design View** to the **Running Queue** for execution from within the File Manager **Experiment** panel by right-clicking and selecting **Copy to Running Queue**.

Opening and Processing Your Data

If your sample has just finished running, the data will already be open in Trios. If you are opening a previous analysis, please follow the following instructions.

To open an existing data file, follow these steps:

1. Click the **TRIOS** button in the upper left corner of the main window. A drop-down menu displays.

2. Select **Open** .
3. Browse to the location of your data file(s).
4. Select the appropriate file type.
5. Select one file or multiple files and click **Open**.
- NOTE: To select multiple files, hold down the Shift key and click to select all of the files in a group, or hold down the CTRL key and click individual files.
- A document panel opens, displaying the experimental procedure and steps associated with that data file.

How the opened file is displayed depends upon the status of the **Load view settings** checkbox in **Options** > **User**:

- If the selection is checked, the file is displayed exactly how it looked when it was last saved, even if it was saved by a different user or on a different controller.
- If the selection is unchecked, the file is displayed using the current display properties.

Basic Steps to Analyzing Data

1. Open the desired data file you wish to analyze.
2. Display the Graph for the desired step.
3. Configure the graph variables as desired.
4. Rescale the graph, if needed.
5. Click on the desired curve you wish to analyze (alternatively, select the desired curve from the graph legend).
6. Click the Analysis tab to display the toolbars.

7. From the **Function** toolbar, select the desired analysis/model from the drop-down menu.
8. Click **Analyze**.
9. Your analyzed data will now appear on the graph.

Deleting an Analysis

If you wish to delete the analysis once it is performed:
1. Select the annotation box in the graph.
2. Select **Analysis** tab > **Commands** toolbar > **Delete** Alternatively, right-click in the annotation and select **Delete** from the pop-up menu. This function removes all lines and labels associated with the analysis.
3. If you wish to delete all analyses, click **Delete All** from the **Commands** toolbar.

Creating Overlays Within an Existing Document

To create an overlay using an existing document file:
1. Open the desired data file.
2. Select a document **Graph** view to be used as a basic for your curve overlay plot. Verify that the graph view is the currently displayed view.
3. Select the desired steps to add to the graph from the **Results** view within the File Manager, then select **Send to Graph** from the options at the top of the File Manager. The selected steps are added to the new graph document using the default layout.

4. Customize the axis variables and curve display options as desired.

5. Save the document, if desired, by selecting **Save** from the TRIOS button drop-down menu or the right-click pop-up menu. The added steps are saved. Only overlays created from steps within a single file will be saved.

NOTE: If an overlay is created within an existing results document generated by an experiment, and the overlay contains steps from a different results document, it will **NOT** be saved. In order to save such an overlay, create an overlay document. Either 1) create the overlay document from the File Manager right-click menu and follow the steps outlined above with the overlay document's graph as the basis for the overlay, or 2) follow the steps above and then export the overlay to a new overlay document ready to be saved.
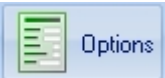
Creating Overlays as a New Document

To create an overlay using a new document file, follow these steps:
1. Open the desired data file.
2. Within the File Manager, right-click and select **New overlay document** to open an empty document file. Make sure this new (empty) document is the currently displayed view.
3. Select the desired steps to add to the graph from the **Results** view within the File Manager and drag and drop them into the overlay document. The selected steps are added to the new graph document using the default layout.
4. Customize the axes variables and curve display options as desired.
   o NOTE: Alternatively, you have the ability to add one step, configure the graph axes as desired, then add the other curves. If the variable exists within the added step, TRIOS will automatically add it to the overlay plot.
5. Save the document, if desired, by clicking **Save** from the TRIOS icon drop-down menu or the right-click pop-up menu. The added steps are saved.

Printing the Graph (PDF)

By default, the graph will print exactly as it is seen in the graph view window. Size the graph window to the desired aspect ratio prior to printing. To scale your graph to the aspect ratio of the printer page, go to TRIOS **Options** and deselect the **Print the graph to match the aspect ratio of the graph view window** option.

Print the graph as follows:

1. Click the **TRIOS** button in the upper left corner of the main window.

2. Select **Print** .

3. Select **Print**, **Print Preview**, **Print PDF**, or **Print PDF All Views** (as shown in the list below).
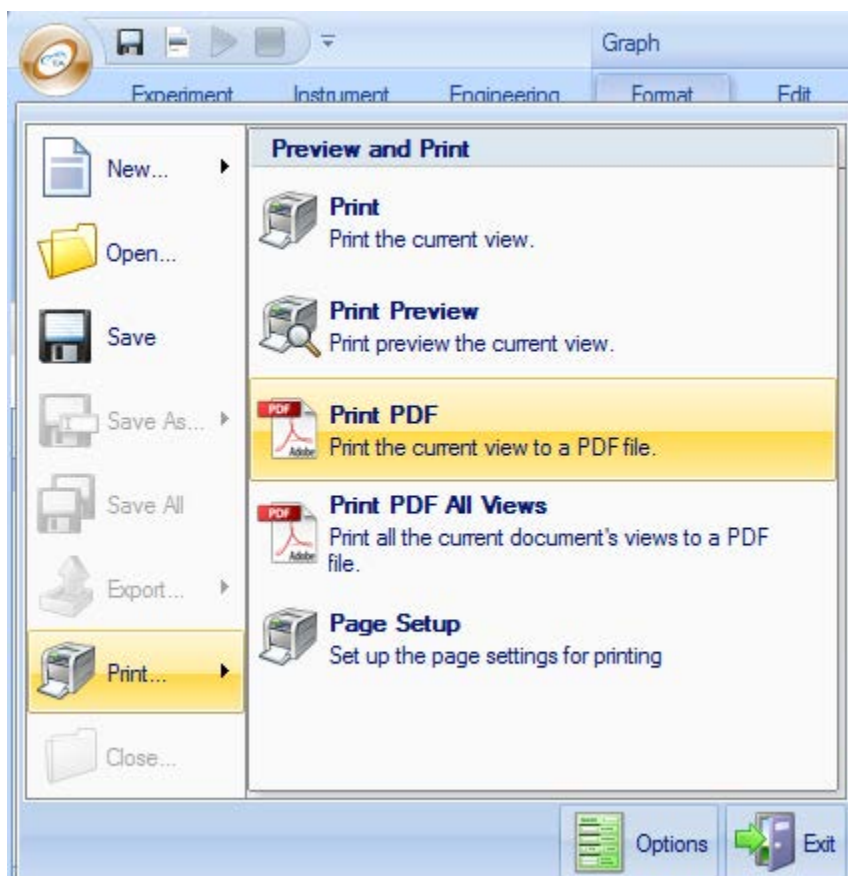
4. Choose the desired options to complete printing your document.

Exporting Data

1. Click the **TRIOS** button in the upper left corner of the main window.
2. Select Export → Excel to export as an Excel spreadsheet
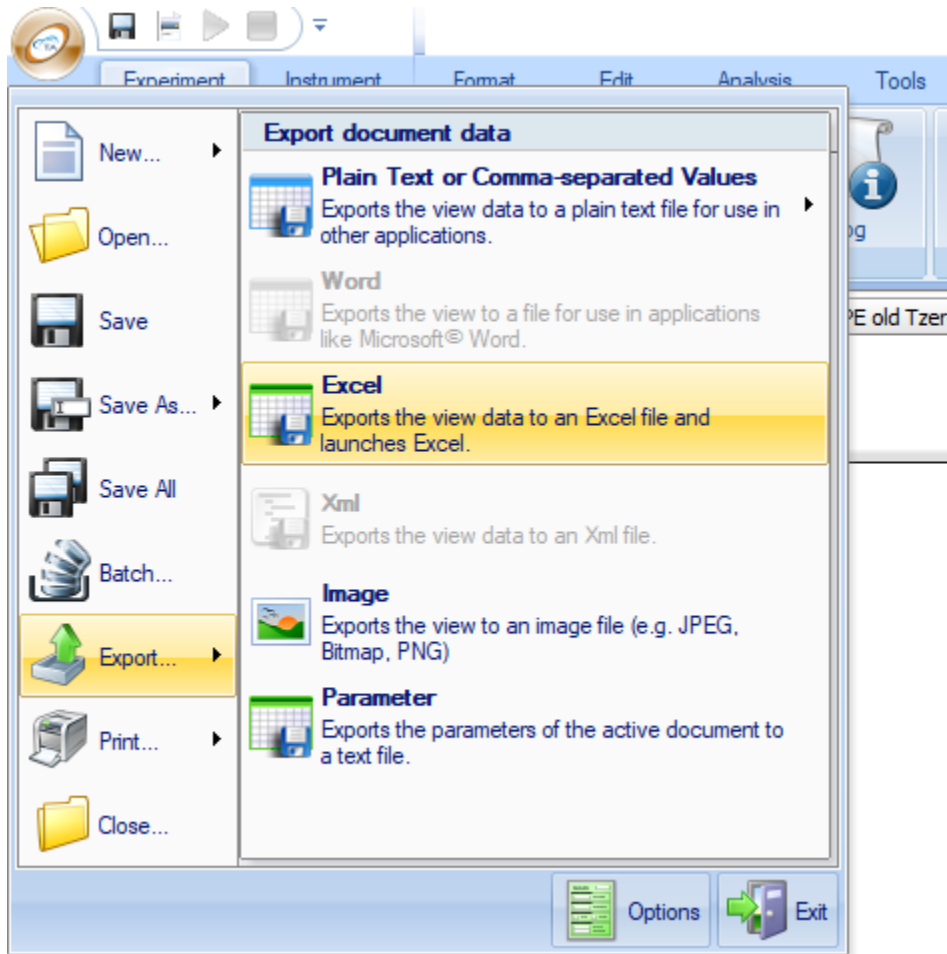
3. A popup window will appear with options for your file.
   o Select include parameters. This will include your experimental parameters for this run (useful for future use).
   o Deselect separate steps into worksheets, unless you want each heating and cooling cycle as a separate tab.
   o If Open Excel after exporting is selected, your spreadsheet will open once exported. Deselect this if you do not want it to open.
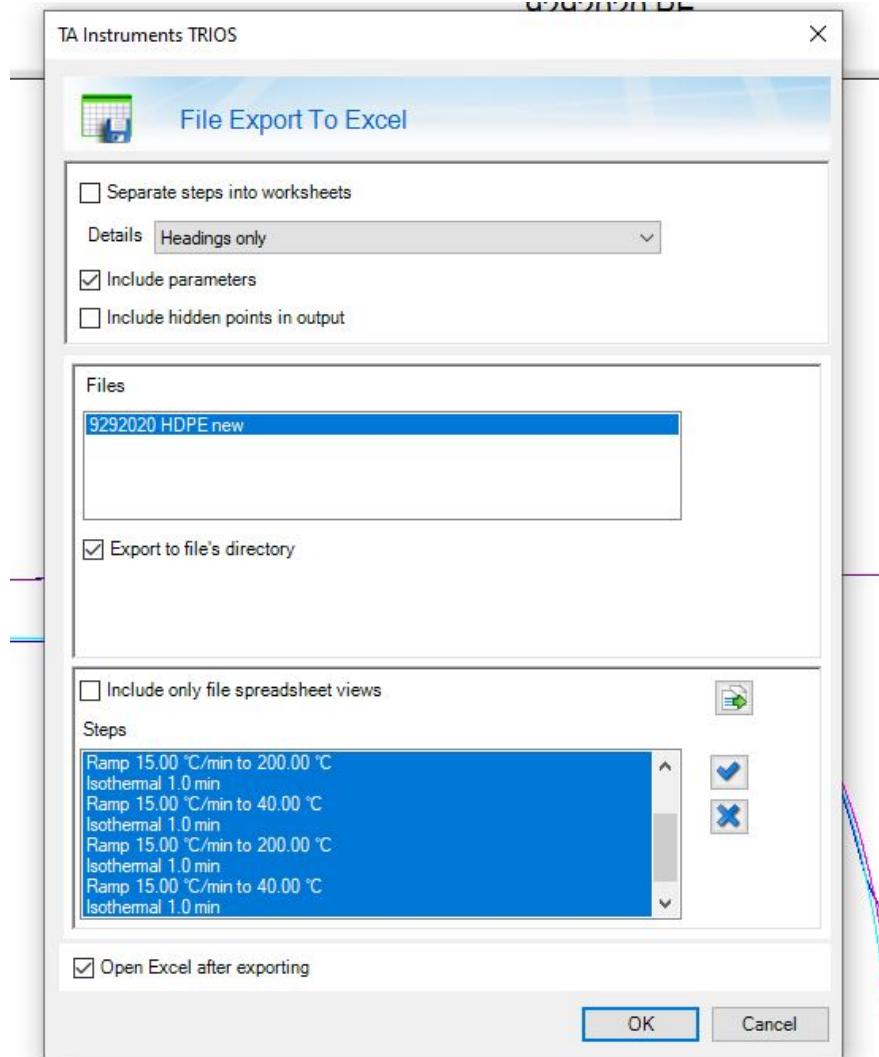
4. Your data is now exported into a .xls into your folder.

Closing a Data File

With a data file open, click the **TRIOS** button in the upper left corner of the main window. A drop-down menu displays.

1. Select **Close**.
2. You will be prompted to save any changes to the data file that have not already been saved.