PerkinElmer STA 6000 Users Guide

revised 6-7-10 sbgb

General notes:

You cannot minimize or close the button used to open the Pyris software.

You have the choice of purge the sample region with air or nitrogen but the electronics must always be purged with Nitrogen whenever the system is on.

1. Turn on the N2 gas (gas cylinder). If you want an oxidizing environment, turn on both the N2 cylinder and the house air line. BE SURE THAT YOU HAVE N2 TO RUN – IT IS REQUIRED TO NOT DAMAGE INSTRUMENT!
2. Turn on the water chiller (it should be set to 20°C) – THIS IS ALSO REQUIRED TO RUN.
3. Turn on the instrument; the switch is in the upper back left corner.
4. Open the Pyris software

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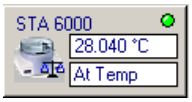
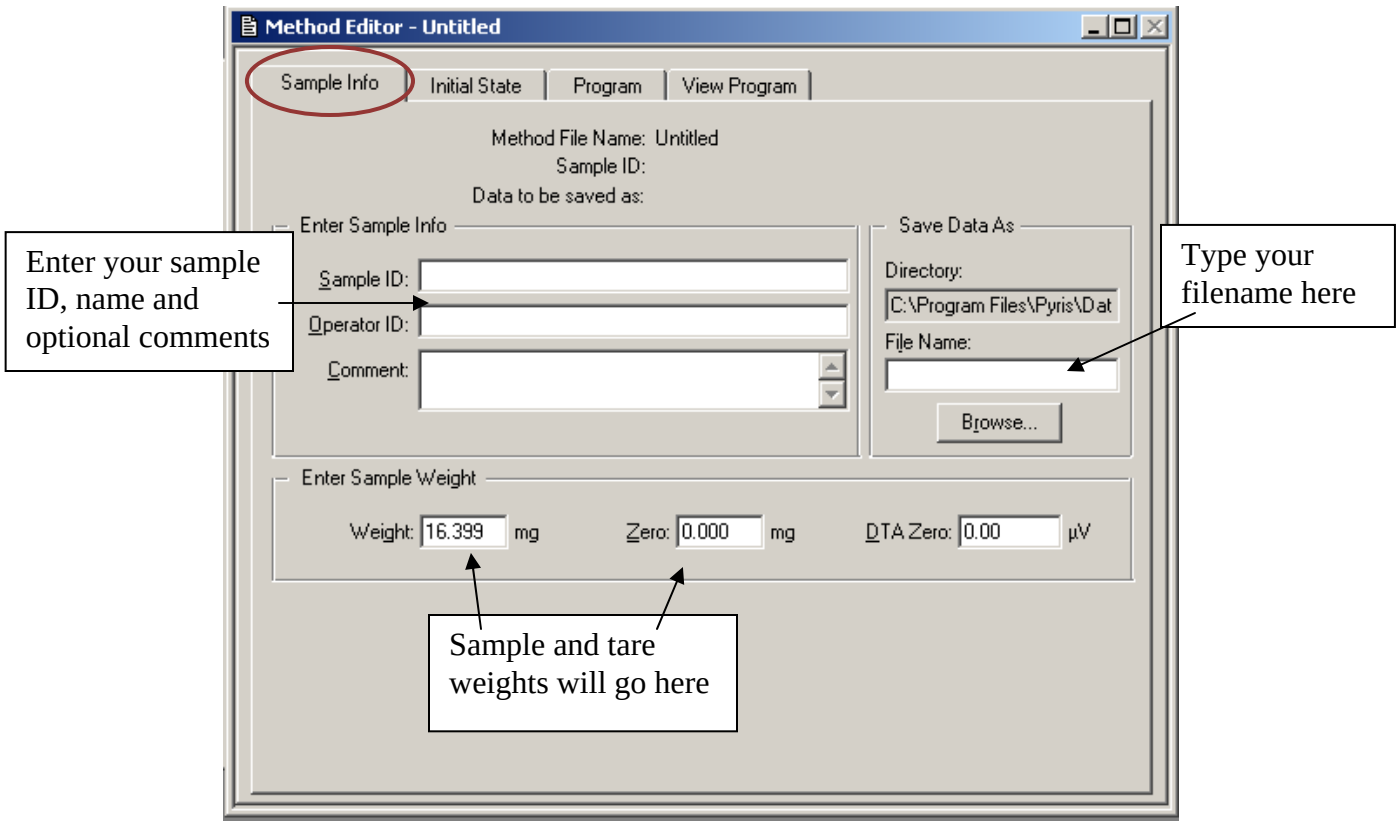
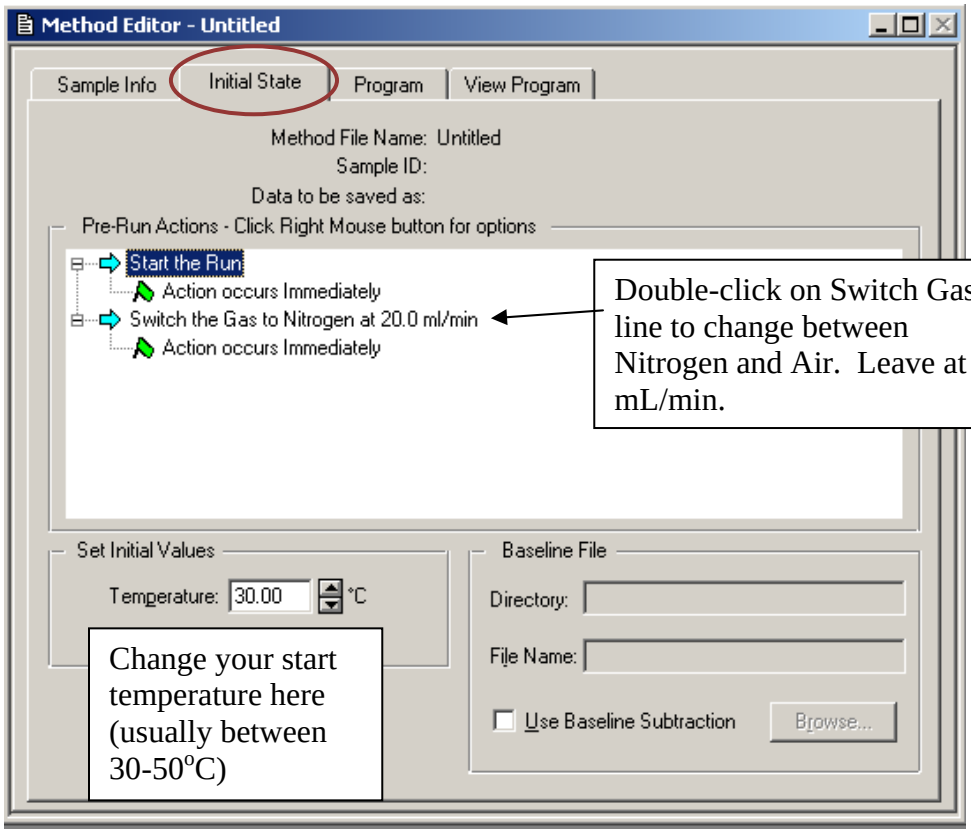
5. Click on the STA 6000 button to start the software 

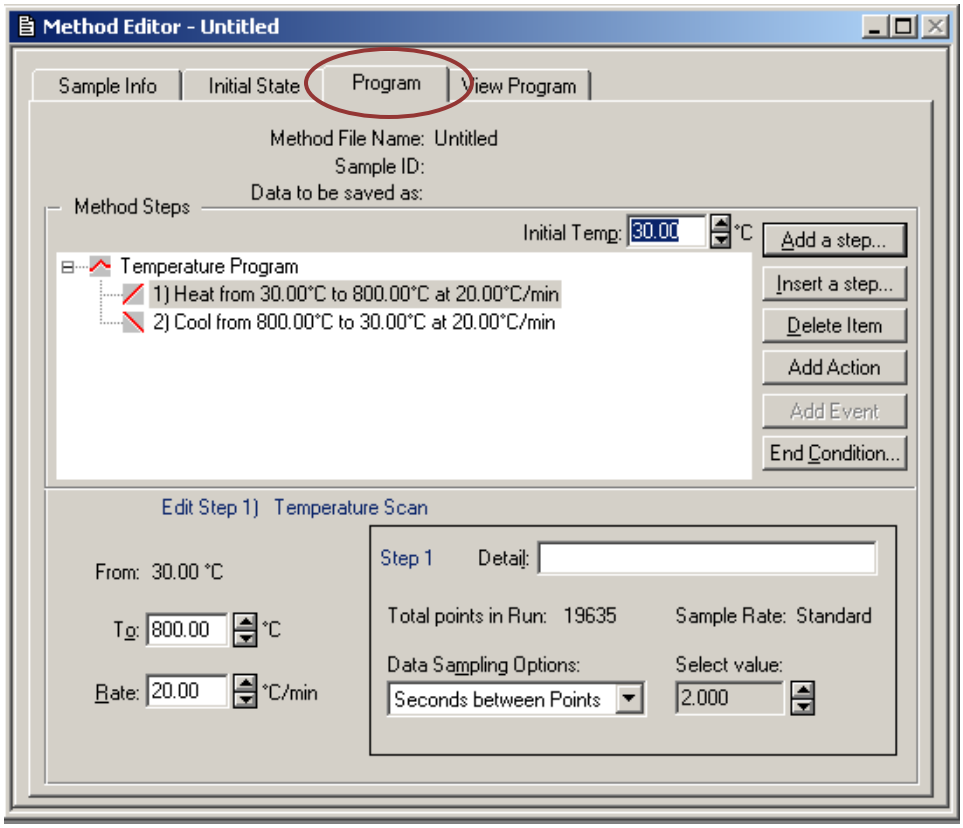
NOTE: The software does take a minute or two to open up.
6. Click on “File” and select “New Method” or “Open Method”
7. In the sample tab under the Method Editor as shown below, enter your Filename and your sample information. Be careful not to overwrite existing methods.



When you tare the pan, click on the icon on the right side of the screen. This will zero the weight, but will put a random, non-zero value in zero box on this Sample Info tab. You MUST change the zero to "0.000" in the box in order to continue!

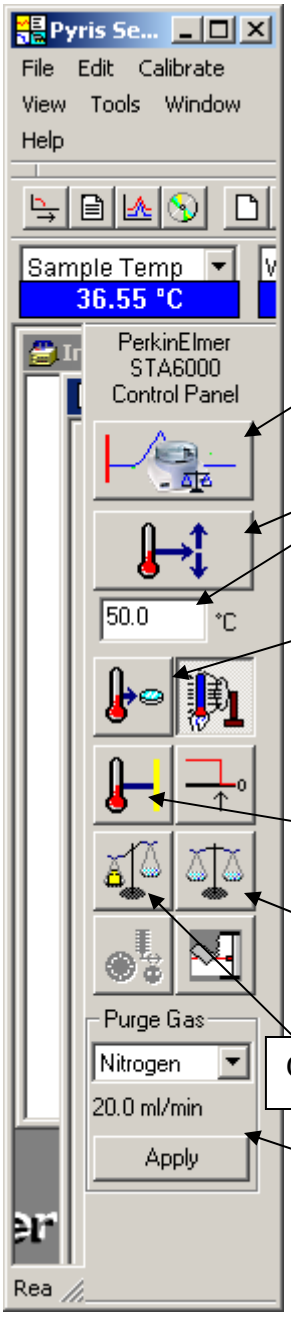
Remove the sample pan, add 10-30 mg of sample, then put it back in the instrument and click the icon to record your sample weight (this one will import correctly).


Method Editor - Untitled
Sample Info
Initial State
Program
View Program
Method File Name: Untitled
Sample ID:
Data to be saved as:
Pre-Run Actions - Click Right Mouse button for options
Start the Run
Action occurs Immediately
Switch the Gas to Nitrogen at 20.0 ml/min
Action occurs Immediately
Double-click on Switch Gas line to change between Nitrogen and Air. Leave at 20 mL/min.
Set Initial Values
Temperature: 30.00 °C
Change your start temperature here (usually between 30-50°C)
Baseline File
Directory:
File Name:
Use Baseline Subtraction
Browse...



To change a step, click the line to highlight it. The temperature and rate at the bottom left corner are for the selected step. To add steps, you can either insert a step (above the highlighted line) or add a step (below the highlighted line). You can add temperature ramps or isothermal steps. To delete a step, just highlight the line and then click Delete Item.

The highest temperature the oven can reach is 900^{o}C. It can go as slow as 0.1^{o}C/min and as fast as 100^{o}C/min.



This button STARTS or STOPS a method.
If the system is not communicating this window will show two spilt connectors with a red slash between them.

This button sends the system to this temperature, used to elevate the temperature to a high starting point while editing the method

This button sends the temperature to the load temperature in the current method

Click to hold the temperature during a run.

Click to tare balance with empty pan
YOU MUCT CHANGE THE TARE WEIGHT TO ZERO IN THE METHOD!

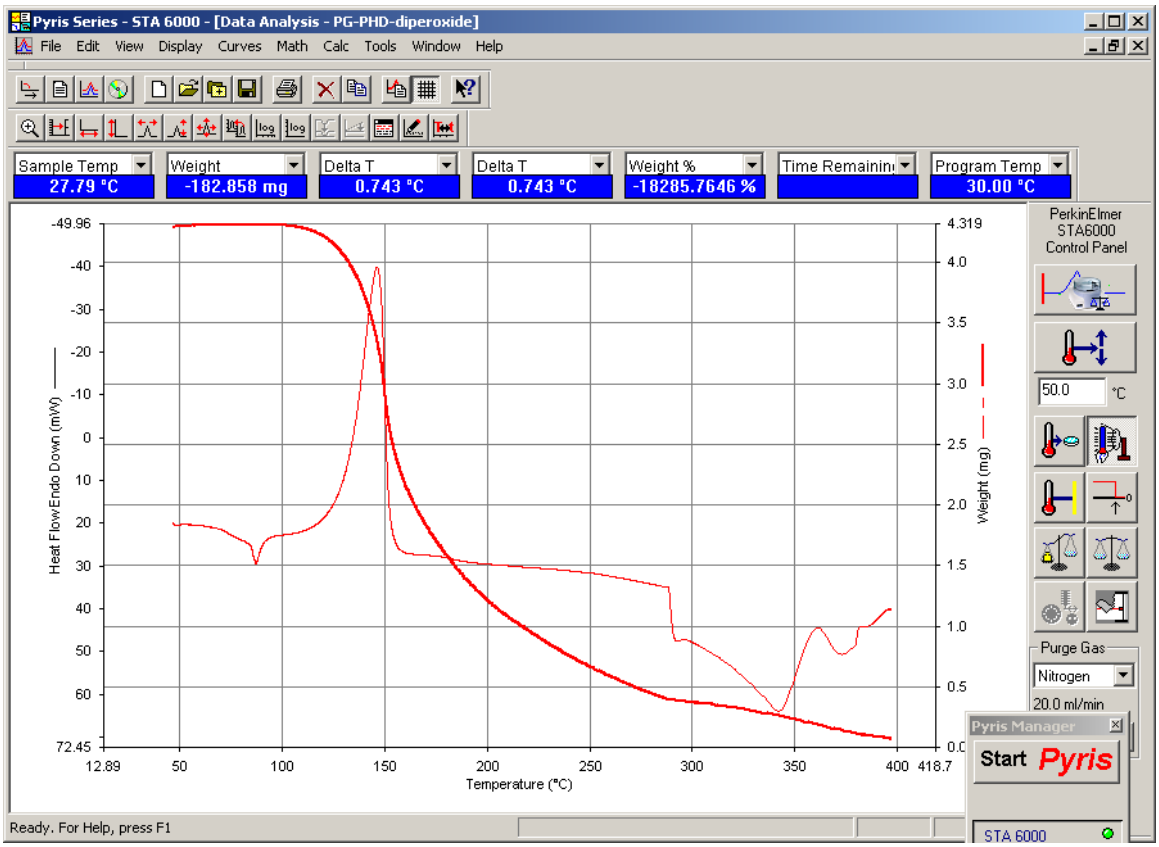
Click to get sample weight

Choose between Nitrogen and Air for sample purge.

BASIC DATA ANALYSIS

To open a file for analysis click the third icon in from the left on the top bar, if you mouse over it “Data Analysis” will pop up.
When the Data Analysis window is open it overlays the other and must be minized to go back to the Method or Instrument windows.

The red bar above the line type on the right hand vertical axis indicates that this axis is active. To activate the axis right click on the legend and select one of the drop down items.
The horizontal axis is either time or temperature. To select right click on this legend



You can the type of data displayed using the Curves menu. The two most commonly used data are heat flow (endo) and weight.

Derivative of heat flow is also commonly used to accurately determine transition temperatures. Click on the endotherm to make it a thick red line, then click the Math menu and select Derivative. The derivative will now be displayed.

Data can be exported into Excel by highlighting the data set of interest to make it a thick red line, then press <ctrl>-c to copy and past the data into a new Excel spreadsheet.