A1 A1-Vernier Melt Station

Connection and Setup to LabQuest Interface

Location

Organic Chemistry Laboratory: 341 DP.

Connection to LabQuest

The Melt Station must be connected to a Vernier interface such as the LabQuest (Figure A1.5) to obtain temperature data. There is no analog output on the Melt Station itself. To connect:

1. Insert the ***POWER*** cord into the LabQuest interface if unplugged.
2. Insert the ***CH2 CABLE*** into the *CH2 SENSOR PORT* on the LabQuest.
3. Disconnect the ***CH1*** and ***DIG1*** cables from the LabQuest interface. (These cables power the polarimeter. Disconnecting will extend the life of the polarimeter light source.)
4. Press the *POWER BUTTON* at the top left of the LabQuest interface.

Displaying Data on the LabQuest

To display the temperature data on the LabQuest, use the stylus to click on the *METER* icon (Figure A1.1) at the top of the screen. Alternatively, the *GRAPH* icon (Figure A1.2) can be used to plot the rate of temperature increase.

Figure A1.1: LabQuest Meter Icon.

Figure A1.2: LabQuest Graph Icon.

Displaying Data on the Computer

1. To display the temperature data on the computer, connect the *USB CABLE* to the *USB PORT* on the LabQuest interface.
2. On the HPLC computer, open LoggerPro or LoggerLite. The LabQuest interface should be detected automatically and the sensor information shown. If the temperature sensor is not shown, go to *EXPERIMENT* and *SETUP SENSOR*. You may also close any unwanted sensors through the same menu. Note that while LoggerPro or LoggerLite are running, the LabQuest interface screen cannot be operated directly. To resume using the LabQuest interface, exit the LoggerPro or LoggerLite software.

Collecting Data

For simple measurements, collect and record the data manually. There is no need to press collect on either the LabQuest interface or the LoggerPro software unless you want to plot temperature as a function of time. To use the LabQuest or LoggerPro software on the HPLC computer to collect and annotate temperature vs. time data, refer to the appropriate Vernier software operating instructions.

Operating the Melt Station

Measurement

1. Load the sample into a closed-end capillary tube. Grind in a mortar and pestle first if necessary.

Rate of Temperature Increase
For accurate measurements, increase the temperature at a rate of 1 ºC/min around the melting point of interest. If the melting point is not known, estimate the mp while increasing the rate at 10 ºC/min. Then, allow the device to cool approximately 10 ºC below the estimated value and repeat the measurment at 1 ºC/min.

2. Pack the sample by dropping the capillary into 1 m tubing, closed-end down.
3. Place the sample into one of the three Melt Station sample wells (Figure A1.3). Observe the capillary through the view screen.
4. Turn the Melt Station dial to the desired temperature. For rapid heating, turn the dial to the *RAPID HEAT* setting (Figure A1.4). Once the approximate melting temperature has been reached, set the dial to that value to heat a rate ~1.5 ºC/min.
5. Observe and record the temperature at which melting begins and ends.

COOLING AND SHUTDOWN

If another sample will be measured, turn the dial to the *COOLING FAN ON* setting (blue light illuminates) (Figure A1.4) until the temperature is below the expected value of the next measurement. When finished, turn the Melt Station dial to the *OFF POSITION* and press the *POWER BUTTON* on the LabQuest interface until the screen shuts off. It is not necessary to disconnect the ***CH2 CABLE***.

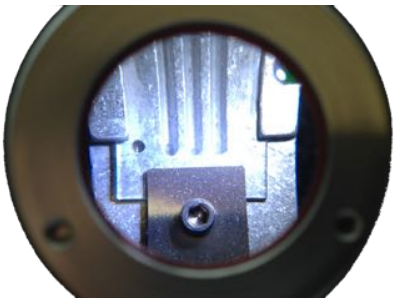

Figure A1.3: View screen on the Melt Station. Three capillary sample wells are visible.

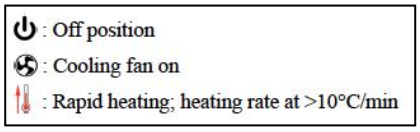

Figure A1.4: Symbols on the Melt Station Control Dial.

Figure A1.5: LabQuest Interface (left) and Melt Station (right).