



Calibration Procedure for Electrothermal Melting Point Apparatus

For equipment calibration purposes and to minimize variation between repeat measurements all calibrations should be taken using 2mm diameter capillary tubes.

Calibration should be carried out annually, or whenever the performance of the apparatus is suspected e.g. when similar successive tests produce variable differences. The apparatus must either be returned to the dealer/manufacturer for calibration, or calibration must be carried out in the following manner, using Calibration key AZ9253 and SMP-KIT.

1. Switch the unit on and ensure the Melting Point apparatus has settled into a constant state
2. Perform a melt (see section appropriate to your IA or Mel-Temp model) with each of the standard chemicals and note the readings.
3. Compare the results obtained with the melting points shown on the certificates supplied with each chemical and ascertain whether the unit performs within acceptable limits.

Calibration

4. Switch off the unit and allow it to cool sufficient for the oven temperature to drop below that of the first melt set point.
5. When the unit is cool switch it back on and allow it to perform the start-up routine. Observe the ambient temperature for the oven is less than 50°C.
6. Insert calibration key into the RS232 socket located on the rear of the Melting Point apparatus.

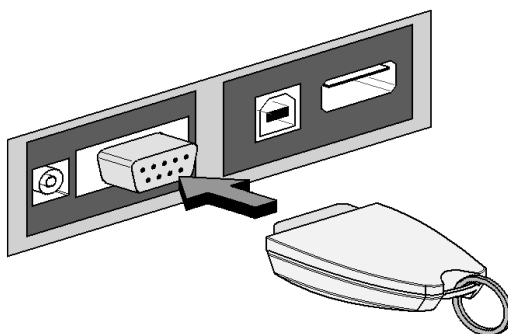


Figure 1: Typical calibration key insertion.


7. Observe the display screen says . Press the return key to accept entry into the calibration mode.

8. The display screen will now say . Use the keypad to enter a value. If you are using Vanillin, use the keypad to enter a value of 77°C.


9. Press the return key to accept the selected temperature. The IA or Mel-Temp will commence ramping at a rate of 1.0°C/minute.

10. Observe when the full chemical melt occurs and press the return key to record the melt temperature.

ENTER CHEM
CERT VALUE

11. The display will now say . The certified chemical melt value can be found online on the Electrothermal website at www.electrothermal.com. Enter the chemical reference value using the numeric keypad. Press the return key to accept the entered value.


HIGH TEMP
SET SAMPLE

12. You are now asked to set the High Temperature . Use the keypad to enter a value. Press the return key.

13. Again the IA or Mel-Temp will start to ramp up the temperature at a rate of 1.0°C/minute.


14. Observe the onset of melt and press the return key to record the value.

ENTER CHEM
CERT VALUE

15. The display will now ask for the certified chemical melt value to be entered . Enter the chemical reference value using the numeric keypad. Press the return key to accept the entered value.

16. A pre-programmed algorithm will now calculate the PID curve based on the two melt values. When that

CAL COMPLETE
REMOVE KEY

has been done the display will say .

17. Remove the calibration key and power down the IA or Mel-Temp. It may now be powered back up again ready for use. Powering down and up ensures the calibration settings take effect.