



MELTING POINT APPARATUS

SMP30 calibration

• Introduction

During manufacture, the SMP30 is calibrated and checked to ensure that it meets the following tolerances: 60°C+/-0.5°C; 100°C+/-0.5°C; 200°C+/-1.0°C. During use, to verify that the SMP30 is operating correctly, periodic checks on the accuracy of the temperature readings can be performed by the user, measuring the melting point of a certified reference standard (CRS).

CRSs are chemicals of high purity that have been tested and certified by standards laboratories. The World Health Organisation (WHO) gives a list of suitable melting point CRSs which includes the following materials:-

Substance	Nominal melting point (°C)
Azobenzene	69
Vanillin	83
Benzil	96
Acetanilide	116
Phenacetin	136
Benzanilide	165
Sulfanilamide	166
Sulfapyridine	193
Dicyanodiamide	210
Saccharin	229
Caffeine	237
Phenolphthalein	263

If the accuracy of the instrument is found to deviate from the specification, the procedure detailed below can be used to recalibrate the temperature displayed on the instrument.

• Equipment and reagents

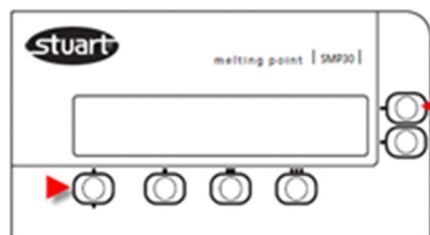
- Glass melting point tubes sealed at one end (SMP10/1).
- Melting point certified reference standard suitable for the temperature range usually used on the instrument (please see the Appendix for suggestions on where to obtain CRSs).

• Method

- First measure the melting temperature of the reference standard and make a note of this.
- Next, access the SMP30 user calibration mode as given in the following steps:

SMP30 Calibration

- Switch off the SMP30.
- Press and hold the left hand button and top-most button.
- Switch on the SMP30.



- The screen will display a menu listing "Trimming", "Change?" and "Exit". Press the button next to 'Yes'.
- The screen will now display "Customer Trimming". Using the up or down buttons, adjust the "Known" temperature to the nominal melting point of the reference standard, as given on the label of the standard container. Press Next.
- Using the up or down buttons, adjust the "Indicated" temperature to the measured melting temperature of the standard (as determined in step 1). Press next.
- If the correction is correct, press "Apply", or "Exit" to cancel.
- Re-measure the melting temperature of the reference standard to verify.

- **Appendix**

The following websites give information on how to obtain melting point CRSs:

<http://www.usp.org/reference-standards/reference-standards-catalog>

<https://www.lgcstandards.com/GB/en>