

# Melting Point Apparatus

Stuart® has become the laboratory name in melting points. Offering solutions to determine high accuracy melting points. Stuart® has a complete range of melting points, from manual to automatic units, to accommodate all users.

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- Melting Point Tubes



# Melting Point Apparatus

## Automatic melting point apparatus, SMP40

- Maximum temperature 400°C
- Utilises latest technology in digital imaging
- 5.7" colour VGA touch screen display
- Unique split design concept
- Integrated cooling, 350°C to 50°C in 10 minutes

The SMP40 automatic melting point uses the latest technology in digital image processing, to accurately identify the melt of up to three samples simultaneously. The unit comes with a 5.7" colour VGA display, on which the melt can be watched real time, or the melt video will automatically be saved as an AVI file that can be reviewed later, either on the unit or via PC, providing traceability long after the sample has gone. The result can also be overridden if for any reason you don't agree with the result calculated by the image processing algorithm.

The SMP40 is fully programmable via the touch screen display, once the user has set the plateau temperature they can select the ramp rate, between 0.1 and 10°C in 0.1°C increments. During use a library of preset methods can be built up to streamline the method input for repeat measurements. For materials where the user is unaware of an approximate melting point, and therefore unable to set the plateau temperature, the SMP40 can be used in rapid melt mode. During rapid melt mode a fast scan of the full temperature range is undertaken to provide an approximate melt temperature, then a method will be automatically programmed with the appropriate plateau temperature to allow a more accurate measurement to be carried out.

The SMP40 has an innovative split design concept, the unit can be used as normal or the control side and the melt side can be separated, allowing for the maximum in footprint flexibility. After the samples have been loaded the melt side of the unit can be placed at the back of the bench or even in a fume cupboard to catch any potentially dangerous fumes. Once the unit has been split the control panel side can be used in two orientations, either landscape or portrait to allow the perfect viewing angle whether you are sat or stood at the bench, the screen automatically changes orientation with the unit.

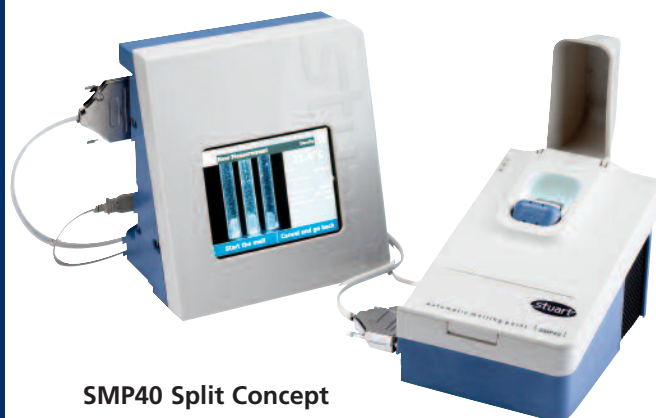
The unit can store up to 200 result files with videos, if required data can be easily transferred from the unit to a flash memory drive or PC via one of the USB connectors.

The unit has been designed to include a number of other useful features such as slots to accommodate pre-prepared samples and a draw to house your unused melting point tubes. Also included in the draw is a handy glass cutter, which can be used to accurately cut tubes in half quickly and cleanly for users who prefer to use half tubes.

All units are supplied with a calibration certificate showing individual serial numbers for traceability. The SMP40 conforms to Pharmacopeia and GLP.



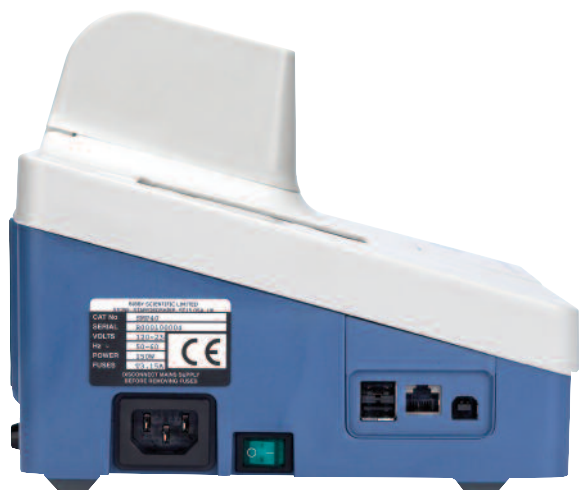
SMP40



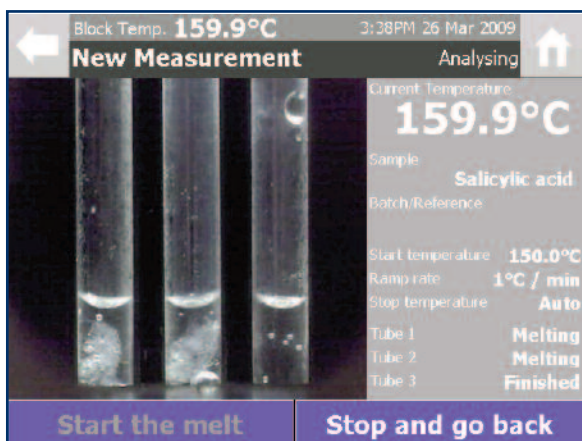
SMP40 Split Concept

# Melting Point Apparatus

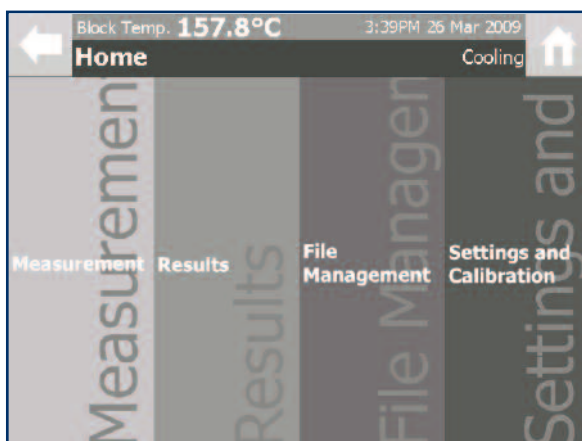
## Technical specification



SMP40 Side Profile



SMP40 Interface - Measurement Screen



SMP40 Interface - Homepage

### SMP40

Number of samples	3 simultaneously
Temperature range	Ambient to 400°C
Temperature resolution	0.1°C
Display	5.7" Colour VGA touch screen
Ramp rates	0.1-10°C in 0.1°C increments
Temperature sensor	PT1000 Platinum resistance
Memory	200 results with video
Cool down time 350-50°C	~10 mins
Heat up time 50-350°C	~ 6 mins
Oven control	Closed loop PID
Flash memory/PC interface	USB
Sample level	2-3mm in 50mm or 100mm length capillaries
Electrical supply	120V / 230V, 50-60Hz
Temperature units	°C, °F, K
Dimensions, mm (h x d x w)	175 x 210 x 328
Net weight, kg	3.2
IP Rating	30

## Ordering Information

Model	Description
SMP40	Melting point apparatus, complete with pack of 100 melting point tubes, closed at both ends.
SMP2/1	Glass melting point tubes, closed at both ends, pack of 100



# Melting Point Apparatus

## Melting point apparatus, advanced, SMP30

- Maximum temperature 400°C
- Patented head up display
- Integrated cooling 350°C to 50°C in 12 minutes
- Large easy to read user friendly interface

The SMP30 can take three samples simultaneously within the optimised heating block with a maximum temperature of 400°C. A plateau facility is included with variable ramp rate between 0.5 and 10°C in 0.1°C increments. The tubes are illuminated with bright white LED's to give the clearest view of the samples during the melt. The block has been designed for easy access for cleaning, the front of the head is fully removable to allow full access to the micro furnace.

The SMP30 has a large clear back lit alphanumeric LCD display, running the menu system which clearly guides you through the melting process with comprehensive directions. It is possible to record up to 8 events in memory for each of the three sample tubes.

The SMP30 features the patent pending head up display, this unique feature displays a floating image of the block temperature, visible through the eyepiece, in front of the tubes. The head up display eliminates the need for the user to keep switching their gaze between the tubes and the temperature display.

To allow the most comfortable viewing angle the SMP30 features a two stage head adjustment. The head can then be stored safely back within the body of the unit for storage. The design of the unit has lots of other useful features such as slots for storing pre-prepared samples and a storage draw to hold a container of capillary tubes.

An accessory printer is available separately to produce a written record of the melt, and all units are supplied with a calibration certificate showing individual serial numbers for traceability.

### Technical specification

	SMP30
Number of samples	3
Temperature range	Ambient to 400°C
Temperature resolution	0.1°C
Display	40 x 4 LCD
Ramp rates	0.5-10°C in 0.1°C increments
Temperature sensor	PT1000 Platinum resistance
Memory	8 results per tube
Accessory printer available	Yes
Date/time display	Yes
Cool down time 350-50°C	~12 mins
Heat up time 50-350°C	~ 6 mins
Electrical supply	120V / 230V, 50-60Hz,
Language variants	English, German, French, Italian
Temperature units	°C
Dimensions, mm (w x d x h)	325 x 200 x 170
Net weight, kg	3.6
IP Rating	30

### Ordering information

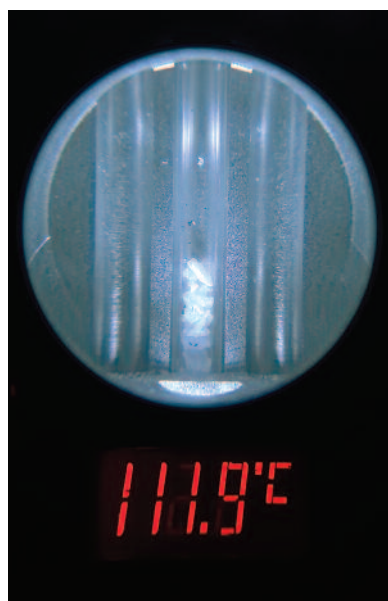
Model	Description
SMP30	Melting point apparatus, complete with pack of 100 melting point tubes, sealed at one end.
SMP10/1	Glass melting point tubes, sealed at one end, pack of 100
SMP30/1	Accessory printer with power supply



SMP30



SMP30



Head up display as seen through viewfinder

# Melting Point Apparatus

## Melting point apparatus, digital, SMP10

- Digital selection & display of temperature
- High accuracy
- Easy to operate with plateau facility
- Ideal for educational use
- Supplied with calibration certificate

The SMP10 has been designed with safety and ease of operation in mind making it ideal for use in education. The temperature is selected, measured and displayed digitally making it accurate and negating the need for a thermometer.

Two samples can be tested simultaneously. They are viewed via a magnifying lens with clear observation aided by built in illumination. Extendible back feet allow the unit to be operated at the optimum viewing angle. Full access to the block aids cleaning.

The simple to follow instructions are printed directly on the instrument in most European languages for ease of use. To operate simply select a plateau temperature via the three digit display and press 'start'. The unit quickly heats up and remains at the selected plateau temperature until the user is ready to start the test. Insert the sample tubes and press 'start'. The unit then heats slowly so that the melt can be observed. When the sample is seen to melt, note the temperature on the display. Press 'stop' to end heating and cool the block.

Supplied complete with calibration certificate showing individual serial number for traceability.

### Technical Specification

SMP10	
Number of samples	2
Temperature range	Ambient to 300°C
Temperature accuracy	± 1.0°C at 20°C ± 2.5°C at 300°C
Display	Three digit LED
Display resolution	1°C
Sensor	Platinum resistance PT100
Ramp rates	20°C per minute to plateau 2°C per minute to melt
Dimensions, mm (w x d x h)	160 x 220 x 170
Net weight, kg	1.8
Electrical supply	230V, 50Hz, 75W
IP Rating	30

### Ordering Information

Model	Description
SMP10	Melting point apparatus, complete with pack of 100 melting point tubes, closed at one end.
SMP10/1	Glass melting point tubes, closed at one end, pack of 100

For standard melting points see page 115.



SMP10



SMP10 fascia

# Melting Point Apparatus

## Melting point apparatus, analogue, SMP11

- Easy to operate - ideal for educational use
- Supplied with safe spirit filled thermometer
- Economical price

With new safety features and easy to use, the SMP11 is ideal for use in education. Supplied with a safe, spirit filled mercury free thermometer, the low toxic blue spirit will not pose a health hazard in the event of a breakage. Easy to follow instructions are printed directly on to the apparatus and are available in most European languages.

With a manually adjustable heating rate, the SMP11 will rapidly heat samples up to 20°C per minute to the melt temperature and up to the maximum temperature of 250°C. Accurate readings to within 1°C of the melt temperature can be achieved by using a slower heating rate of between 1 and 10°C per minute.

Up to three samples can be viewed and tested at any one time. Samples are illuminated by a bright white LED and viewed via a magnifying lens. The magnifying lens can be detached for cleaning using the simple to follow instructions printed on to the instrument.

### Technical Specification

#### SMP11

Number of samples	Up to 3
Temperature range	50°C to 250°C
Heating rate	1 to 10°C per minute
Dimensions, mm (w x d x h)	370 x 140 x 110
Net weight, kg	1.7
Electrical supply	230V, 50Hz, 50W
IP Rating	40

### Ordering Information

Model	Description
SMP11	Melting point apparatus, complete with thermometer and pack of 100 melting point tubes (open both ends)
SMP11/1	Spare thermometer, spirit filled, 0°C to 250°C
SMP1/2	Cooling plug (brass) for rapidly reducing heating block temperature after use

## Melting point tubes

Made from soda glass, these tubes are easy to seal in a Bunsen flame and break into two. Supplied in robust tube holder, pack of 100 tubes. Tube overall length is 100mm Tube diameter = 1.9mm, inner diameter = 1.3mm and wall thickness = 0.3mm.

### Ordering information

Model	Tube type
SMP1/4	Open both ends
SMP2/1	Sealed both ends
SMP10/1	Sealed at one end



SMP11

