NFU 420 Analogue melting Point Apparatus

Purpose:

Determining the melting of small quantities of substances, in the range of 30° to 250°C, to aid the identification and assessment of purity of the substances.
Melting point test for up to a maximum of two samples can be conducted simultaneously. A rotary knob is adjusted to vary the heating rates from 0°C/min to a maximum of 20°C/min to heat the sample to its melt temperature. The maximum temperature range is 260°C. The magnifying lens in the eyepiece aided by the illumination provided by a bright white LED gives clear view of the sample during its melting phase. The melting point temperature can be noted down by reading the thermometer. Other features include an indication buzzer in case of crossing the maximum temperature of 260°C.

Theory:

The criterion of the purity of a solid organic substance is its melting point.
This may be defined as the temperature at which the compound changes from solid to the liquid stage.

If an organic compound is pure, it will usually melt within a range of 1° at the most. If it is impure, the melting will occur at a lower temperature or over a wider range. If a pure compound is mixed with a small amount of another pure compound, the melting point is generally lowered. This fact is useful in establishing the identity or non-identity of any two solids.

Specifications:

Number of Samples 2
Operating Range Ambient temperature to 250°C

version A48215.16.06

Heating Rates 1°C/min to a max of 20°C/min
Electrical Supply 230V, 50Hz, 65W
Cabinet Dimensions 185 (W) x 220 (D) x 176 (H) mm
Net Weight 1.2 Kg

Operating Procedure

- Set up the apparatus in a situation as free from draughts as possible
- Locate the melting point block in the recess in the unit so that the thermometer is positioned in the notch of the folding support arm, on the side of the case and the bulb of the thermometer touches the heating block
- It is advisable to heat the apparatus to 150°C for a few minutes then allow it to cool to clear any condensation which may have formed
- Seal one end of the capillary tube over a flame and insert a small amount of the sample under investigation into the open end. Tap the tubes gently to ensure the sample is located at the bottom of the tube. Samples should be fresh, dry and free from contamination
- Insert the tubes into the heating block, and if only one sample is being tested, place an empty tube in the free hole to reduce air circulation
- Rotate the temperature control knob fully anticlockwise on ensure heating block in off. Insert the mains plug into a suitable socket and switch on
- The temperature control knob is now rotated clockwise to give the required rate of heating - refer to Temperature guides. The control is calibrated to give an indication of the rate of heating
- If the approximate melting point of the sample is known the apparatus may be heated quite rapidly to approximately 20°C below the expected melting point, then the rate of heating must be regulated to give a temperature increase of about 2°C per minute
- If a number of melting points are to be determined, it is advisable to conduct these in order of their ascending temperature requirements

CAUTION – the heating block will get hot when left on for long periods of time. Please be aware on this when handling the unit.

An alarm will sound when the temperature exceeds 260°C. To turn the alarm off, move the temperature knob fully anti clockwise and allow the heating block to cool down.

If the temperature sensor is by chance disconnected, the LENS LED will stop glowing and the heater turns off.

On powering up the device, if heating rate control knob is not positioned at OFF position, the device will not power up. User has to set the Knob to OFF position in order to start the heating process.

version A48215.16.06

Warranty, repairs and spare parts:

The Analogue Melting Point Apparatus is guaranteed for a period of one year from the date of delivery to the customer. This warranty does not apply to defects resulting from the action of a user such as misuse, improper wiring, any operations outside of its specification, improper maintenance or repair, or unauthorized modification.

Our liability is limited to repair or replacement of the product. Any failure during the warranty period should be referred to Customer Services.

In the event of a fault, apart from replacing the instrument fuse in the IEC socket, the power supply should be referred to the Philip Harris recommended repair agent.

Please contact Customer Services or techsupport@philipharris.co.uk for advice

Disposal of Waste Electrical and Electronic Equipment (WEEE)

Do not dispose of this product with household waste

- For the proper treatment, recovery and recycling please take this product to an appropriate collection point.
- If you are unsure where this is, contact your Local Authority.
- By disposing of this product correctly you will be providing positive help to the environment.

Supplier details:

Philip Harris Education, 2 Gregory Street, Hyde, Cheshire SK14 4RH

Orders and Information	Tel: 0845 120 4521
	Fax: 0800 138 8881
Repairs	Tel: 0845 120 3211

E-mail: techsupport@philipharris.co.uk

Website: www.philipharris.co.uk

version A48215.16.06