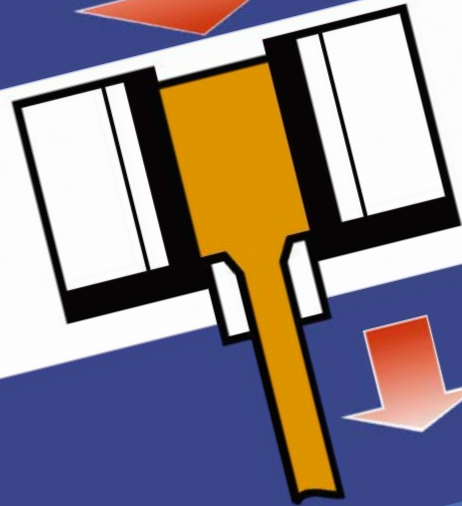




MELTING POINT



DESIGN AND PRODUCTION OF
INSTRUMENTS AND APPARATUS
FOR QUALITY CONTROL
ON MATERIALS



These instruments are made in
compliance with CE health and
safety requirements



Range of Application

CEAST's melt-point apparatus offers a precise and rapid response in the determination of the melt-point of all materials having a characteristic melt point included between 30 and 300°C.

In the specific field of semicrystalline polymeric materials (acetyl resins, metacrylic resins and similar) it is also possible to fit the apparatus with a viewing system employing a polarized light to facilitate ascertaining the exact melt point therefore increasing accuracy and reproduction of the determination itself.

Since melt-point is a characteristic value for each material or chemical composition its determination is most useful in many fields as, for instance, in acceptance control, quality control during production, research and many others.

Test Method

A sample of the material to be tested is previously prepared and placed, between two glass slides, on the thermostation block of the apparatus and the sample illuminated. Using a control system the temperature of the block is raised, in linear ratio, in a given time.

During heating the sample is observed through the magnifying system. When melting of the material is reached the temperature read of the thermometer is recorded, this value is the objective of the test.

In the case of semicrystalline polymeric materials the disappearance, at melt, of the phenomena of double re-fraction typical of crystals can be easily observed and defined using the lighting system with polarised light because the interference fringes are annulled.

In the case of amorphous materials as for instance powdered polyamide resins, determination of melt point is made easier by the use of a few drops of silicone oil forming a meniscus under the glass slide. When the material melts the support given to the glass slide by the sample disappears, therefore the meniscus disappears indicating that the material has melted.

Standards

The instrument was manufactured according the following standards
ISO 1218, ASTM D 789, DIN 53736
and others equivalent.

Ancillary Equipments**Polarized light system - code 6185/170**

Consisting of:

- Polarizer filter fitted to light support
- Analyzer filter fitted to optical system

This accessory if used when carrying out determinations on semicrystalline materials and by adjustments to the filters allows the operator to view the crystals separating them from the mass. At melt point the crystalline structure disappears thus melt point can be better defined with greater care and accuracy.

Water cooled block - code 6185/150

Consisting of:

- Block of duralumin anodized complete of connectors to a H₂O source
- Manual interception valve.

With this accessory, connected to the water mains, the cooling of the thermostatic block after each determination is considerably speeded up and so is the following determination.

Nitrogen diffuser for tests in neutral gas conditions - code 6185/151

Consisting of:

Annular diffuser in duralumin with optical crystal cover and connectors. Can be used for direct connection to a gas source or to gas scrubber-regulator of gas pressure in the test area.

With this accessory tests can be carried out in inert atmosphere where materials degrade at high temperature in air or oxygen.

Calibration system at different temperatures from 40 to 200°C - code 6185.001

Consisting of:

- Set of 1 g (each) of melting powdered materials (at known melt-point).

Temperature from 40 to 260°C at intervals of 5°C (by request).

By using these samples thermometers can be calibrated by establishing point by point, the equivalence gram between indicated and actual temperature.

This check is most important since whilst the thermometer - even if accurate by itself - when mounted on the apparatus can give wrong readings as a result of the coefficients of thermal transfer of the various materials in contact.

Silicone oil and dropper - code 6185.002

Necessary when carrying out tests according to ASTM D 789 Nylon injection moulding and extrusion materials.

Syringe type die - code 8062/020

Consisting of:

- Tabular matrix
- Cylinder punch

To obtain specimens die punched to the \varnothing required by the Standards (\varnothing 1.6 mm).

Thermometer

- Thermometer 0 to 300°C richtangle – code 0100.237
- Thermometer +75 to 105°C – Div. 1/10°C – code 0100.238
- Thermometer +95 to 155°C – Div. 2/10°C – code 0100.239
- Thermometer +145 to 205°C – Div. 2/10°C – code 0100.240
- Thermometer +195 to 305°C – Div. 5/10°C – code 0100.241

Technical Data

- | | |
|----------------------------|---|
| • Working stations: | one |
| • Working temperature | +30 to 300°C |
| • Optical enlarging system | non spherical lens and double filter |
| • Power | 28 diopters |
| • Focussing | screw system and slack take-up |
| • Lighting | low tension focussing lamp |
| • Thermostatic block | anticorodal |
| • Dimension of block | \varnothing 65 x 25 mm (h) |
| • Dimension of melt-point | \varnothing 20 x 3 mm (h) |
| • Heating | electrical with shielded resistor |
| • Cooling (standard) | natural |
| • Controls | Main switch
Regulator of dissipated power
Rapid heating switch over |

Technical Characteristics

Overall dimensions (LxDxH) [mm]	350 x 250 x 180
Weight [kg]	4
Supply	230 V - 50 Hz - Singlephase (110 V - 60 Hz on request)
Power [W]	250
Paint	fuchsia RAL 4006 - gray RAL 7035

"Due to the continuous development policy of CEAST's Research and Development Department, changes may be introduced without notice"



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