

## TEC 400 / TC 400

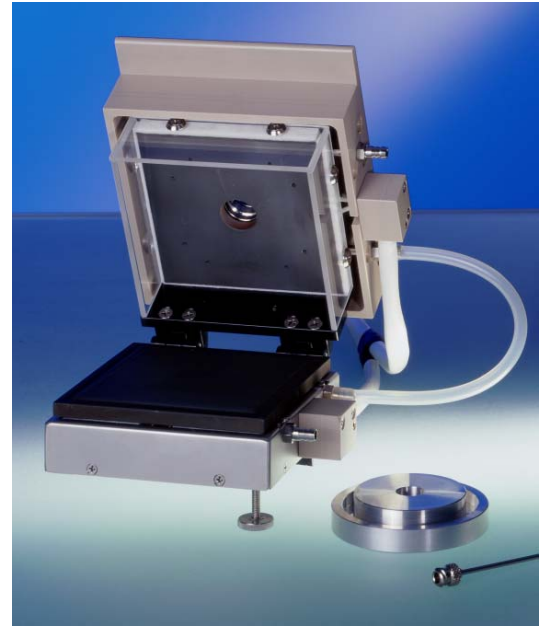
Electrical temperature control unit

Electrical heated high-temperature control unit for use with the optical contact angle measuring systems of the OCA and ACA series. For the temperature controlled measurement of the interfacial properties under inert gas atmosphere of polymer melts, liquid metals including solders, or hot melts at temperatures up to 400 °C.

The temperature setting can be done manually or software controlled (in combination with the software SCA xx) over the controller TC 400.

For the measurement of:

- the temperature dependent static and dynamic contact angle as well as the surface free energy of solids according to the Sessile & Captive Drop-method
- the surface and interfacial tension of polymer and metal melts
- the adhesion properties of pressure sensitive adhesives and hot melts e.g. by determination of the dispersive and polar contribution of the surface tension (see Dataphysics-Application Note No. 8)



TEC 400

The TEC 400 consists of the thermal chamber TEC 400 and the controller TC 400 with the following features:

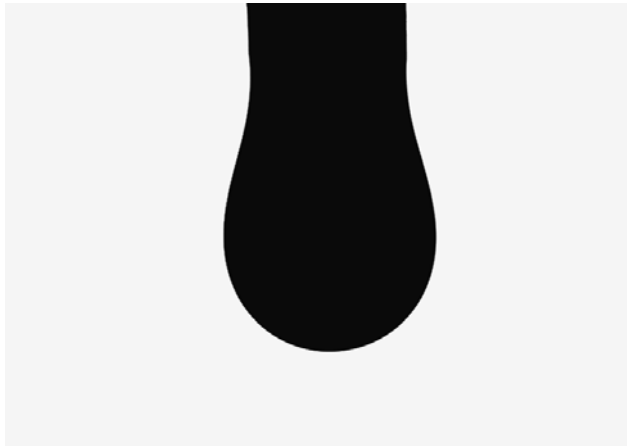
- thermal chamber with 3 windows made of special optical glass
- lower and upper plate electrically heated surface with a wear resistant (scratch proof) plasma-ceramic coating
- connectors for air or nitrogen cooling of lower and upper heating plate
- connector for inert gas with ring-shaped gas outlet in the upper plate
- two resistance thermometers Pt 100 as measuring and control sensor
- cover plates for the optimization of the needle entry gap for varying problems
- adaptive PID controller with sensor break protection



TC 400

# Technical Data

<b>Temperature range</b>	room temperature ... 400 °C; ± 0.1 K accuracy with cold gaseous nitrogen down to - 30 °C
<b>Heating rate</b>	1 K/s
<b>Maximum sample size (LxWxH)</b>	94 x 94 x 24 mm
<b>Chamber size (LxWxH)</b>	140 x 155 x 86 mm
<b>Chamber weight</b>	1.5 kg
<b>Controller size (LxWxH)</b>	250 x 120 x 210 mm
<b>Controller weight</b>	7.8 kg
<b>Power supply controller</b>	100, 120, 220 and 240 VAC; 50 ... 60 Hz; 400 VA
<b>Controller interface</b>	RS 485 Modbus



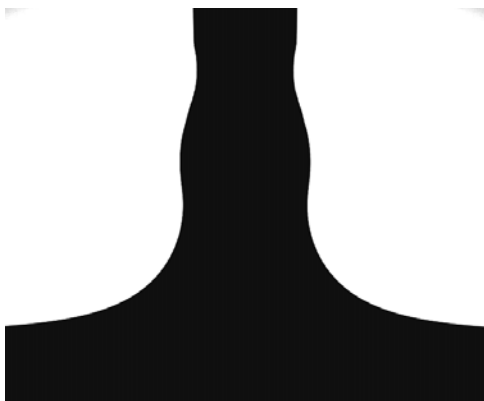
Pendant drop of a hot melt on a heated cannula (NHD 400)



NHD 400 with TEC 400

The TEC 400 enables, in combination with the software **SCA 23**, fast and efficient measurement and analysis of the surface and interfacial tension at temperatures up to 400 °C by means of the **lamella contour analysis**.

In combination with the software **SCA 22** and the electrical heated high-temperature needle **NHD 400** the measurement of the surface tension of a small amount of sample is possible at temperatures up to 400 °C by means of the **drop contour analysis**.



Lamella contour of molten polymer on a test sphere

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