

Accessory for Thermo Scientific rheometers



Submersion Flow Cell

A new measuring cell for measuring semi-solids submerged in a liquid has been developed. This new unit can be used with the Thermo Scientific HAAKE MARS and the Thermo Scientific HAAKE RheoStress 6000. The new measuring cell is derived from the established SHRP measuring cell (for measurements on bitumen submerged in water), and is designed for studying the evolution of the visco-elastic properties of a material under specific “environmental conditions”. For example the softening or “plastification” of a semi-solid due to the interaction of the sample with a liquid can be quantified accurately in shear tests.

Additionally texture analysis measurements (penetrometry, etc.) can be performed by using the axial movement and normal force measurement functionality of the rheometer.

The measuring cell is designed to be mounted on a temperature control unit,

e.g. the Peltier temperature control unit. The cell is basically a parallel plate measuring geometry with a special serrated lower plate. The serration profile has a width of 0.5 mm and a depth of 1 mm, with small holes at the bottom of the grooves. Because of the modular design of the cell plates with other profiles can easily be delivered on request. In order to obtain a maximal interaction between the (semi)-solid sample and the liquid, the liquid can be forced to flow through the holes in the serration grooves and thereby actively applied to the sample, by means of a pump.

This new measurement cell can be used in cosmetic/pharmacy applications like the simulation of the interaction of lotions and creams with the (human) skin or the measurement of the adhesive properties of plasters under the influence of (body) liquids. Other applications can be found in the direction of construction materials, coatings, etc.

Key words

- Thermo Scientific HAAKE MARS
- Thermo Scientific HAAKE RheoStress
- Liquid contact and temperature control
- Ambient conditions
- Semi-solids

Order Information:

603-0360 Submersion flow cell for adaptation onto a Peltier temperature control unit with connectors for a circulator and an exchangeable serrated lower measuring plate (available diameters 20, 25 and 35 mm other diameters are available on request)

Necessary accessory: a matching upper measuring geometry, e.g. 222-1266 Plate PP35, D=35 mm, made of titanium

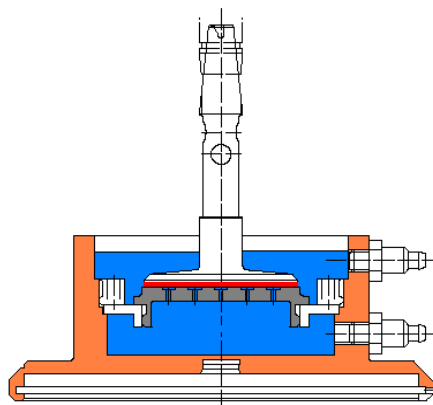


Fig. 1



Fig. 2

Fig. 1: Schematic illustration of the submersion flow cell.

Fig. 2: Submersion flow cell with selection of lower plates.

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