



Rheology Solutions

Rheology Solutions is the sole Australian distributor of this product range and we welcome the opportunity of discussing your application requirements.

*We hope the information you are seeking is contained within this file.
If you have any questions, or require further information please contact us.
We look forward to being of further service.*

Regards from the Team at Rheology Solutions.

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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:

222-2012 Submersion flow cell for adaptation onto a temperature control unit (e.g. Peltier) with connectors for a circulator, incl. an exchangeable serrated lower measuring plate with diameter 35 mm (other diameters are available on request)

Necessary accessory: Adapter plate depending on the used temperature control unit

222-2013 MPC design for RSXXX (Peltier)

222-2014 MP design for RSXXX (liquid, electrical)

222-2015 TMP design for temperature module TM-XX-P

a matching upper measuring geometry, e.g.

222-1269 Plate P35 Ti L, D=35 mm, made of titanium

222-2018 Two part sample cover made of POM

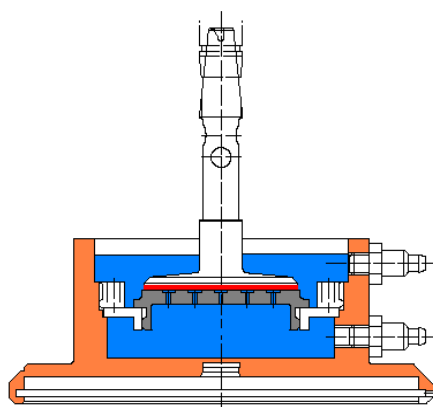


Fig. 1



Fig. 2

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

Fig. 2: Submersion flow cell with selection of lower plates (on the right: standard version of lower plate).

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