

## Accessory for HAAKE Rheometer



### Sample loading tool for measurements on pellets and powders using a plate/plate- or cone/plate- measuring geometry

In most of all cases rheological investigations on polymers were performed using a rheometer with plate/plate- or cone/plate- measuring geometry.

Too much or too less sample volume can result in an experimental error of up to 20% for the viscosity or the modulus.

In order to get reliable experimental data with a high reproducibility a suitable sample preparation is necessary, e.g. production of specimen using an injection moulding machine. The feed material can be modified due to the fact that the sample preparation is carried out at the processing temperature of the polymer.

A sample loading tool was designed for measurements using the feed material in form of pellets or powder. This tool consists of a forming tool for measuring geometries with different

diameters (20, 25 und 35 mm), a tool to check the forming as well as a set of disposable strips made of stainless steel.

The strips have a thickness of 0.2 mm. Using a moulding tool these strips can be shaped into loops with diameters corresponding with the lower plates of our cone/plate or plate/plate geometries. Having this border around the lower plate, the geometry can easily be filled with pellets or powders. Afterwards, the automatic lift, controlled by HAAKE RheoWin, will move the upper geometry into measuring position and the metal strip can be opened and taken away.

This procedure leads to an optimum filling of the geometry with a correct sample volume and no air bubbles.

The filling procedure should be carried out at the measuring temperature in order to eliminate a thermal modification of the sample.

#### Key-words

- HAAKE rheometer
- Plate/plate-measuring geometry
- Cone/plate-measuring geometry
- Pellets
- Powders

Dr. Cornelia Küchenmeister  
Dr. Klaus Oldörp

Thermo Electron (Karlsruhe) GmbH  
Dieselstrasse 4  
76227 Karlsruhe  
Tel: +49 (0) 721 4 09 44 44  
Info.mc.de@thermo.com

[www.thermo.com/mc](http://www.thermo.com/mc)

#### Order Information:

222-1776 Sample loading tool for plate/plate- and cone/plate – measuring geometries incl. set of disposable strips (50 pcs.)

Optional Accessories / Spare parts:

222-1805 Set of disposable strips out of stainless steel (50 pcs.)



Fig. 1: Sample loading tool for cone/plate – measuring geometries consisting of forming tool (left), tool to check the geometry (middle) and strips out of stainless steel (in the front); measuring plate cover with sample loading tool (right)