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Thermo Scientific HAAKE MiniLab 3

The micro-compounder for small sample amounts

The Thermo Scientific™ HAAKE™ MiniLab 3 needs a sample amount of 5 g only. Compounding expensive materials or materials available only in small quantities is therefore no longer a problem. The HAAKE MiniLab 3 spans the whole range of material science research and can be used for compounding of nanomaterial, bio-polymers or other high-value polymer based compounds. Simultaneously, the rheological properties can be recorded to monitor structural changes during processing. When using the optional force feeder, continuous extrusion with very low material throughput is possible.

Main features

- Co- or counter-rotating twin screws
- Integrated viscosity measurement
- Automatic bypass operation for circulation / extrusion
- Pneumatic feeding
- Tablet based control
- Optional PC based software
- Easy to clean due to split barrel
- Fits into laboratory fume hood

Concept

This little high-tech tool is perfect for material science research, such as compounding of expensive additives or the development of new formulations.
The third generation of this successful micro-compounder is also based upon the proven conical twin-screw design with an integrated back-flow channel. Due to the channel and a bypass valve the residence time can be precisely controlled. The new pressure transducers in the backflow channel expand the measuring range up to 300 bar. They deliver superb relative melt viscosity data, which is in good accordance with external rotational rheometer measurements. The instrument can be operated with co- or counter-rotating screws, has an inert gas flush system and offers optional ½" UNF measuring ports in the barrel top.

Applications

The HAAKE MiniLab 3 offers a quick and early assessment of new material formulations and thus helps to shorten time to market. It is ideal for the precisely controlled extrusion of high viscous melts. By running the instrument in circulation mode, the required reaction time can be controlled easily. By opening the bypass valve the sample is extruded as a strand. Measuring the torque and the pressure in the backflow channel, the reaction process is monitored effectively.

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Feeding options

- Standard pneumatic feeding system
- Optional manual feeder
- Optional HAAKE Force Feeder (enables continuous feeding)

Instrument control

The HAAKE MiniLab 3 can be controlled via a modern tablet computer. Adjustment of process parameters and displaying of online data is then right at your fingertips. Alternatively the PC based Polysoft application software can be used.

The tablet based operation offers

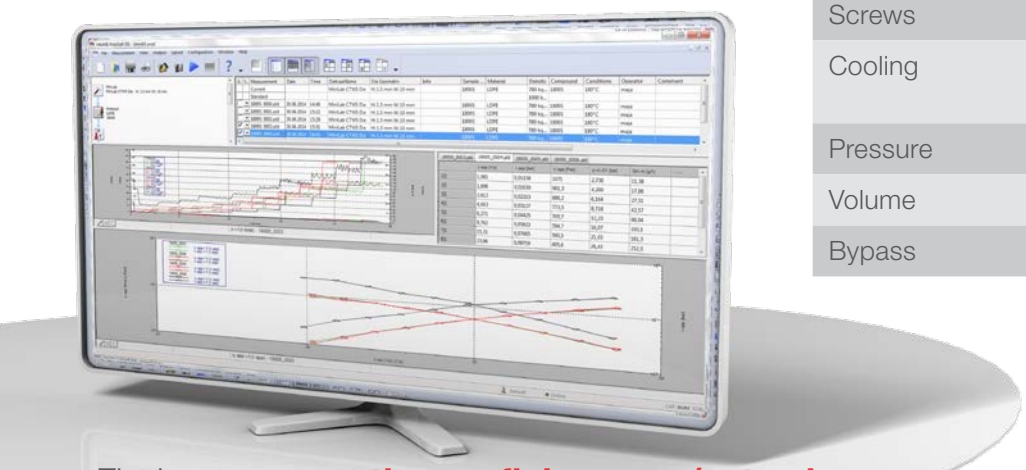
- Easy handling with a modern GUI
- Wireless communication BLE 4.0 (or higher)
- Numerical and graphical data monitoring
- Extruder is prepared for inductive loading of the tablet

The Thermo Scientific Polysoft application software offers

- Instrument control via USB
- Storage of test setup and test results in one file
- Flexible data documentation
- Advanced evaluation methods of rheological data (viscosity, shear stress)

Lower barrel with closed bypass valve and pressure transducers

Technical specifications		
Drive		
Motor power	400 W	
Screw speed	1...400 rpm	
Max. torque	5 Nm per shaft	
Power supply	230 V, 50/60 Hz 115 V, 60 Hz	
Options	no sensor ports	ported Barrel (2x 1/2" UNF)
HAAKE MiniLab 3, 350 °C	567-2270	567-2271
HAAKE MiniLab 3, 420 °C	567-2275	567-2276
Accessories		
	Set of die-plates	
	Take-off belt	
Extruder specifications		
Screw design	Conical, co- or counter-rotating pair of screws	
Barrel	High performance plastic mold steel (M340)	
Screws	Stainless steel 1.4122	
Cooling	Air/water for 350 °C version, air for 420 °C version	
Pressure	Up to 300 bar	
Volume	7 cm^3	
Bypass	Pneumatic valve	



Find out more at **thermofisher.com/extruders**

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