Leistritz
EXTRUSION TECHNOLOGY

ELONGATIONAL RHEOMETER

Data sheet

MADE IN GERMANY

extruders.leistritz.com

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Technical Data: Leistritz Elongational Rheometer

Power unit	
Type	motor-gear-combination (AC synchronous servo motor)
Cooling method	fully closed machine, surface-cooled
Rated output	1,1 kW
Protection class	IP54
max. permissible drive torque	50 Nm
permissible output speed	50 min^{-1}

Melt pump	
Type	gear metering pump
Product to be fed	various polymers like PP, PE, PET, PA, ABS
Operating temperature	up to 350°C
Permissible cleaning temperature	550°C (without seal)
Feed rate	1,321 cm3/rpm or 2,624 cm^3/rpm
Pre-pressure	minimum 10 bar
max. Counter-pressure	500 bar
max. Differential pressure	450 bar

Melt pressure sensors (5x)	mercury-free / 0 - 500 bar
Melt temperature sensors (1x)	Typ J (Fe-Cu/Ni)
System volume	43 cm^3

No responsibility is taken for the correctness of the specifications provided.

The rheometer facilitates online measuring of the shear viscosity with shear rates in the range of 10 to 10,000 s^{-1} and the elongational viscosity with elongation rates in the range of 5 – 75 s^{-1}. It has a newly developed, patented die geometry with a hyperbolic narrowing that generates a constant elongational flow. This has not been possible with current online measurement devices. During a continuous measuring process, the operator can query two measured values of shear viscosity and one measured value of elongational viscosity in the according, precisely defined shear and elongation ranges at the same time.

Operating principle

During the extrusion process, a small amount of the melt flow is channeled off via a bypass system and pushed through the rheomter's slot die. After the measurement the material is transferred back into the process without losing any material.

The melt flow can manually be diverted outwards, e.g. for determining the melt density. However, if sensitive material is being processed, the melt flow can also permanently be diverted outwards.

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