

**Title:**

Rheometer

**Sub-title:**

MCR 302e (Anton Paar): Modular Compact Rheometer for the characterization of flow and deformation properties of materials in response to applied forces.

**General description:**

This machine can operate in rotational and oscillatory mode applying a torque to the materials by turning in a single direction or in two directions. This allows to determine properties like viscosity, shear stress, shear modulus as well as storage/loss moduli in liquids and gels. The Peltier temperature control ( $-40^{\circ}$  to  $200^{\circ}$  C) allows measuring temperature effects on rheological parameters.

**Features:**

- High-Precision EC Motor provides a torque range from 0.5 nNm to 230 mNm.
- Suitable for accurate measurements of low-viscosity samples.
- Integrated Normal Force Sensor allowing for measurements up to 50 N.
- Toolmaster™ recognition system for automatic detection of measuring geometries.
- Available measuring geometries: Cone and Plate (CP50-1, cone angle  $0.995^{\circ}$ )

**Applications:**

- Measuring the viscosity of liquids such as oils, polymer solutions, inks, etc.
- Characterizing shear-thinning and shear-thickening behavior of liquids.
- Studying time-dependent properties like thixotropy or rheopexy.
- Temperature sweeps for studying phase transitions of materials.
- Measuring viscoelastic properties such as storage modulus, loss modulus and complex viscosity.
- Rheological characterization of suspensions, slurries, and emulsions.