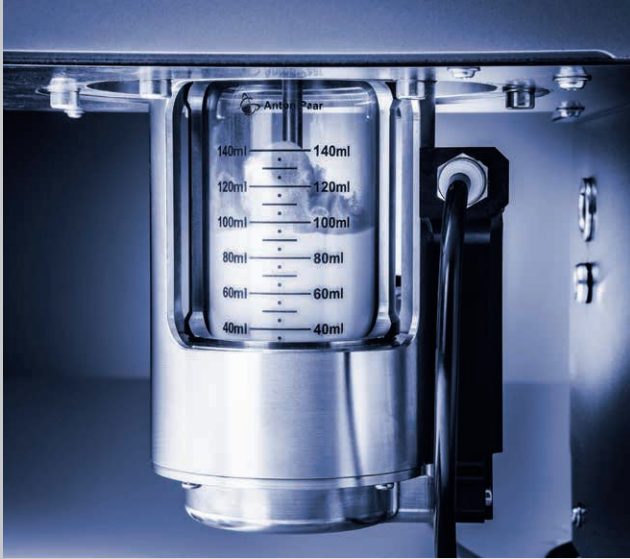




Powder Cell

Powder Flow Measurement for Scientific Purposes with MCR Rheometers



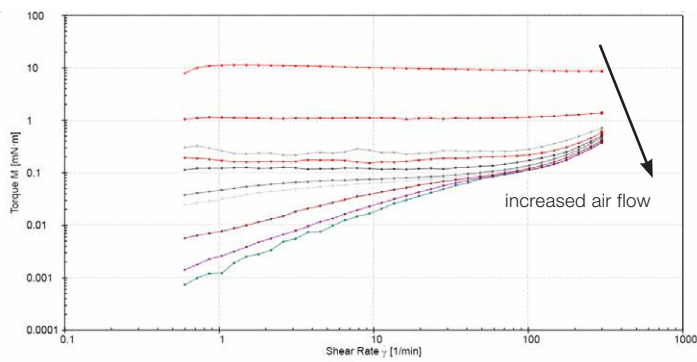
Granular Media and Measurement Method

The Powder Cell is a unique instrument for the study of dry granular flows, especially in the fluidized or near fluidized state.

Bulk solids and especially fluidized beds are a complicated and above all multivariate object of study. However, in regard to suspension rheology, fluidized beds and dense/dilute suspensions share certain similarities, namely their classifications as two-phase flow systems and the complex interplay between particle-particle interaction, bulk viscosity of the nonsolid phase and the frictional and collisional parts thereof.

The unique Dust Protection Hood allows for measurements of powders of every Geldard group and flow behavior while retaining the amazing precision that you are used to from Anton Paar rheometers.

The picture below is an exemplary series of flow curves (shear rate sweeps) showing the behavior of the powder at different rates of fluidization and agitation.



True Powder Rheology

The Anton Paar Powder Cell brings the amazing precision achieved with MCR rheometers to the field of granular media. It not only includes a precision pressure-drop device but also enables rotational as well as oscillatory tests in any state of either consolidation or fluidization. You are also given the option of customizing the measurement systems according to your specifications. Implement your ideas for further developing the science and art of granular media analysis – based on the precision Anton Paar's engineering offers you.

Further benefits include the precision Mass Flow Controller, with which you can gather new data between zero-load and the fluidized state, and the Dust Protection Hood that provides the necessary precaution for measurements on powders, including potentially hazardous types.

Specifications

Torque range:	max. 300 mNm
Min. torque rotation:	10 nNm (air seal influence included)
Normal force range:	0.005 N to 50 N
Normal force resolution:	0.5 mN
Dust Protection Hood:	$d \geq 5 \mu\text{m}$ particles, 100 % dustproof; $5 \mu\text{m} > d \geq 1 \mu\text{m}$ particles, 90 % to 95 % dustproof
Measurement systems:	two-blade stirrer, Warren-Springs geometry, cylinder, profiled cylinder, further systems on request
Pressure options:	high precision pressure sensor (0.8 bar to 1.2 bar absolute pressure) or other sensors on request
Fluidization options:	Mass flow controller: 0 L/min to 15 L/min Standard gas: air other gases and flow rates on request

Compatible with the following MCR rheometers:

MCR WESP

MCRxx1 Series (all devices)

MCRxx2 Series (all devices)

Specifications may vary depending on the instrument

Your distributor: