

# Evolution Powder Tester: Measurement of Powder Flowability



**The Evolution Powder Tester** is an economical and easy-to-use powder flow tester that measures the unconfined yield strength of a powdered material (a critical flow property). The unconfined yield strength can be measured at one pressure or at many different pressures in order to create a flow function. The flow function presents the material's gain in strength after more pressure had been applied to it. The results are used when optimizing the flowability of powders, for quality control and for prediction of flow problems for example after storage.

### Evolution Powder Tester Advantages:

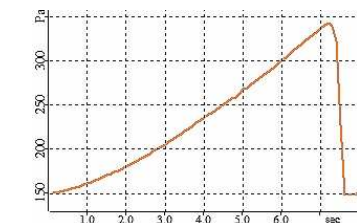
- Measure powder flow behavior of a compressed sample directly
- At a fraction of the cost of competitive instruments
- Very fast measurement, easy to use



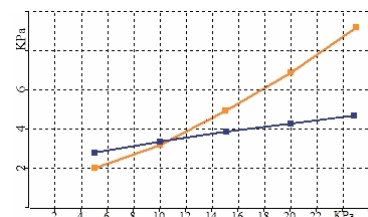
**Working Principle:** The powder or granular material is filled into the measurement cup of the EPT. The sample cup is placed into the instrument and is automatically compressed to a given value (major consolidation stress). In a second step the instrument pushes the sample cake out of the cup and slowly increases pressure automatically until breakage of the powder cake. The maximum pressure reached is the unconfined yield strength. Alternatively several sample cups can be stored under load with weights at ambient condition or in a climate chamber. Afterwards they are placed in the EPT instrument and powder cake strength is measured again automatically.

### Measurement Results:

- Unconfined Yield Strength
- Flowability  $ff_c$
- Flow Function
- Compression curve
- Time-, Humidity-, Temperature effects



Measurement run on one sample



Flow Functions of two samples

### Technical Data:

- Size 9 x 14 x 35 cm
- Weight: 4 kg
- Sample size: 30ccm or 100ccm
- Pressure range: 1 – 500 kPa
- Analysis time: 2 min



Time Consolidation of 3 samples in a climate chamber