Evolution Powder Tester

A Powder Flow Instrument

The **Evolution Powder Tester** is an economical and easy-to-use powder flow tester that measures the unconfined yield strength (a critical flow property) of powders and granular materials. 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.



Advantages:

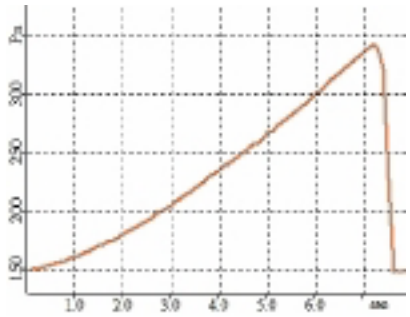
· Typical Analysis Time is 3 minutes.
· Cost is low compared to competitive instruments.
· Little operator training is required for use.

Working Principle:

The test material is loaded into the measurement cell and placed in the instrument. The sample is then compressed to programmed pressure (major consolidation stress). In the next step, the Evolution automatically removes the sample from the cell and the force required to break the powder mass is measured. The compression force is called the major consolidation stress and the break force is called the unconfined yield strength. A flow factor (ff) is calculated by dividing the major consolidation stress by the unconfined yield strength. A flow function is created by plotting the unconfined yield strength versus the consolidation stress at several pressures.

Time Consolidation:

Sample cells can be stored under load at ambient or climate controlled conditions to measure the effects of humidity, temperature and pressure on the material's flow.



Break Force Curve

Measurement Results:

· Unconfined Yield Strength
· Flow Function
· Compressibility
· Time, Humidity, Temperature Effects
· Bulk Density

Flow Factor (ff) Classification:

· Non-Flowing	(ff < 1)
· Very Cohesive	(1 < ff < 2)
· Cohesive	(2 < ff < 4)
· Easy Flowing	(4 < ff < 10)
· Free Flowing	(ff > 10)

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