

Powder Testing Workstation™ PTW Modules



Angle of Repose – provides a simple method for assessing the frictional characteristics of powders, making it ideal for predicting manufacturing issues associated with gravitational flow. Incorporating a 100 mm diameter circular test platform, powder cone heights up to 145 mm can be easily read from the digital height gauge display. The Angle of Repose (θ) is determined by measuring the powder cone's height in millimetres, dividing it by 50, and calculating the inverse tangent to obtain the angle in degrees.

Flow Through an Orifice via Cylinder – records the time taken for a known quantity of powder to pass through a cylinder with an outlet orifice of a given diameter. Featuring interchangeable stainless-steel disks (ranging from 4 to 36 mm), it provides key insights into flow rate and behaviour. Optional Balance and Timer attachments further enhance accuracy by simplifying mass vs. time tests.



Flow Through an Orifice via Funnel – records the time taken for a fixed quantity of powder to pass through a funnel of known outlet diameter. Supplied with quick-change nozzles (5, 7, 10, 15, and 25 mm), it simulates flow in hoppers or similar equipment. Made from pharmaceutical-grade 316 stainless steel, the funnel features a simple shutter system for easy testing.

Bulk Density via Scott Volumeter – determined using a Scott Volumeter in accordance with USP and Ph. Eur. standards. Comparisons of bulk and tapped density can be used to derive metrics such as Carr's Index and Hausner Ratio, providing information on powder behaviour during handling and storage.



Shear Cell – evaluates how consolidated powders transition into flow, providing a valuable insight into powder behaviour in hoppers, bins, and feeders. This simple, cost-effective method helps understand the incipient flow properties of bulk solids.

Metal Powder Testing – evaluate flowability using Hall, Gustavsson, and Carney Flowmeter methods, in accordance with ISO and ASTM standards, to gain insights into powder behaviour in processes such as filling, spreading, and compaction, crucial for advanced manufacturing methods.

