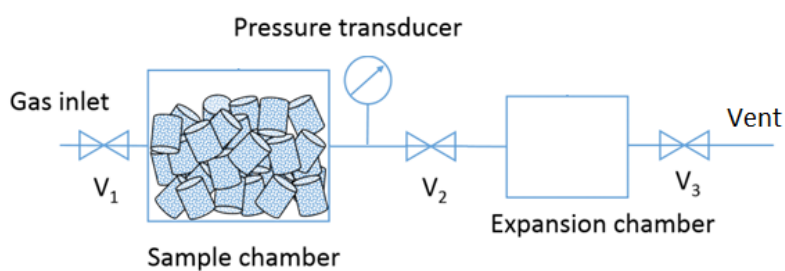


## Gas Pycnometer

Gas pycnometer measures the skeletal volume of a material by gas displacement using the volume-pressure relationship of Boyle's Law. A sample of known mass is placed into the sample chamber and maintained at a constant temperature. An inert gas, typically helium, is used as the displacement medium. Gas is introduced to the sample chamber and then expanded into a second empty chamber with a known volume. The pressure observed after filling the sample cell and the pressure discharged into expansion chamber are measured, and then the volume is calculated. The density is determined by dividing the sample weight by the volume measured.



Gas pycnometers provide non-destructive volume measurements with extremely high precision and speed. It is used extensively to track the purity and porosity of a wide variety of solids. Density measurements are extremely valuable and reliable tools to quickly and routinely characterize the structure and quality of solid materials such as catalysts, ceramics, foams, minerals, metal powders, soils, cements, pharmaceuticals, and many more.

For charging and staff in-charge information, please refer to [the charges for the use of instrument](#).