# Differential Scanning Calorimeter

The differential scanning calorimeter (DSC) is a fundamental tool in thermal analysis. It is used to study how a material's heat capacity (Cp) is changed by temperature. A sample of known mass is heated or cooled and the changes in its heat capacity are tracked as changes in the heat flow. This allows the detection of transitions such as melts, glass transitions, phase changes, and curing. Applications of DSC include the characterization of polymers, fibers, films, thermosets, elastomers, composites, pharmaceuticals, foods, cosmetics, as well as organics and inorganics.
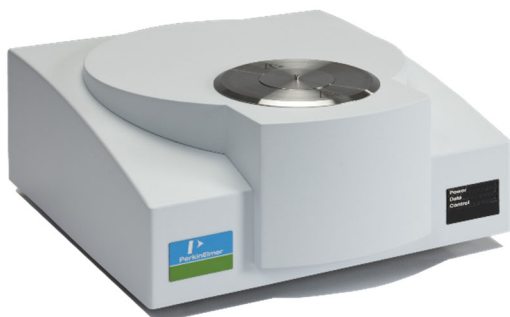
DSC Applications	
• Glass transition	• Oxidative stabilities
• Melting points	• Curing
• Polymorphism	• Purities
• Crystallization	• Phase changes

DSC consists of a furnace and an integrated sensor with designated positions for the sample and reference pans. Both pans are heated in the measurement chamber. In this process, the difference in the amount of heat required to increase the temperature of a sample and reference is measured as a function of temperature. Sample and reference will be maintained at same temperature throughout the experiment. DSC curves were plotted based on heat flux versus temperature or time.
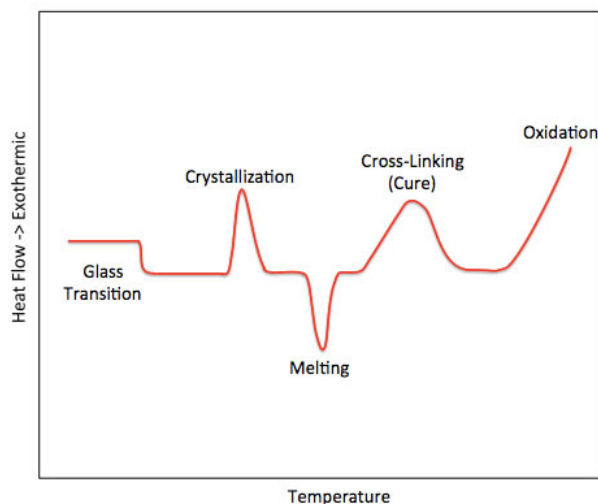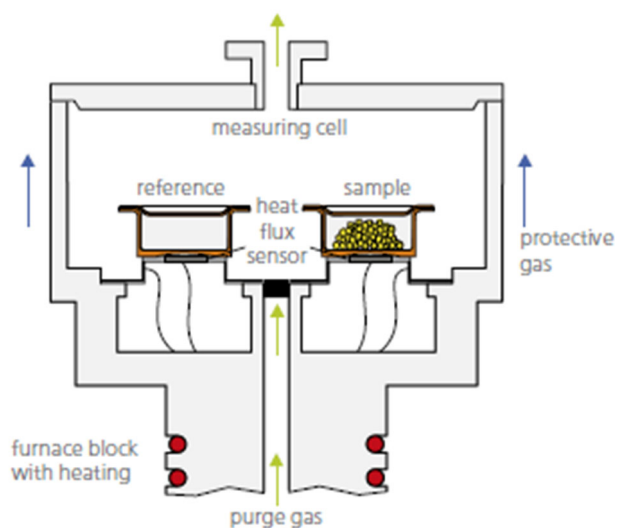
For charging and staff in-charge information, please refer to the [charges for the use of instrument](#).