

# DSC 600

## Differential Scanning Calorimeter

# Description

The Differential Scanning Calorimeter (DSC) is a powerful instrument that measures the energy absorbed or released as a function of time or a controlled temperature profile. The sensor of the DSC is the heat flux plate which is designed to give superior performance and reliability. The heat flux plate is capable of measuring small energy changes over the entire temperature range. Examples of measurements with DSC are Melt enthalpy, Glass transition, Heat of Crystallization, Purity Determination and Heat Capacity.

The DSC has been developed in conjunction with the powerful Infinity Pro software to provide superior performance. The new 24 bit high resolution electronics with USB interface has been designed from the ground up to offer years of reliability.





## Materials

- Thermoplastics
- Thermosets
- Rubbers
- Phenolics
- Cosmetics
- Foods
- Pharmaceuticals
- Chemicals
- Petrochemicals
- Coals and other Fuels
- Nuclear Research
- Propellants

- Explosives
- Dental Materials
- Catalysts
- Waxes

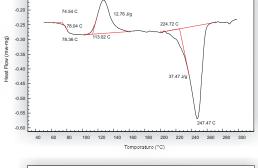
## **Applications**

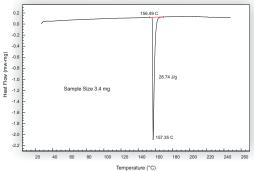
#### Modified PET

This modified PET is an excellent example of the types of analysis that can be done in the DSC. The glass transition is analyzed showing onset, midpoint and a selected endpoint. Crystallization is the second peak with temperature of 127.34 C showing area analysis as well as temperatures. Finally the melt on this curve with a peak of 247.47 C.

#### Indium

This indium standard shows a stable baseline with excellent temperature accuracy. Indium has a theoretical melt onset of 156.6 C with endothermic values of 28.5 Joules per gram.





# **Specifications**

Windows XP or Windows 7 compatible

Temperature range: Typically -150 C to 725 C

Temperature accuracy: 0.1 C Temperature Precision: 0.1 C

Noise: .5 u W

Stability: < 1 m W ambient to 550 C

Heat flux plate material: Chromel or Constantan Sample and reference thermocouples: Type K

Furnace thermocouple: Type K Dual PID control with USB Interface

10 temperature segments each has 1 ramp, 1 isotherm

Program rates of 0.1 - 200 degrees C/min

### Hardware Features

- High sensitivity heat flux plate
- Very low mass furnace
- Multiple sensor plate designs available
- Integral cooling jacket
- · Solid silver block for superior heat transfer
- Mineral insulated furnace
- Type K thermocouple
- Dual PID loop for temperature control
- Heating rates up to 200C per minute
- · Manual or automatic cooling
- · Preheated purge gas
- Multiple types of sample pans
- Small instrument footprint

Specifications subject to technical change DSC 600 System v1.1

# **Options**

- Liquid Nitrogen cooling attachment
- Refrigerated Cooling Accessory
- Sample crimping and sealing presses
- Computer system
- · Multiple modules
- Gas switching accessory

















