



DSC N-650

Differential Scanning Calorimeter

Description

Differential Scanning Calorimeter (DSC) is a powerful technique that measures the energy absorbed or released as a function of time and temperature. The sensor of DSC is the heat flux plate which is designed to give superior performance and rugged reliability. The heat flux plate is capable of measuring small energy changes. Examples of measurements with DSC are Melt enthalpy, Glass transition, Heat of crystallization and Purity determination.

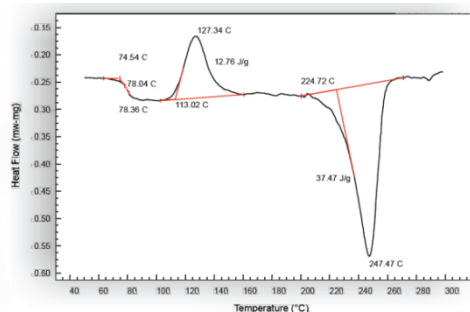
The DSC has been developed in conjunction with the powerful software to provide superior performance. This new instrument has been designed from the ground up to offer years of reliable and accurate data. Thermosets, Thermoplastics, Composites, Pharmaceuticals, Binders and Building materials are examples of some of the materials tested with DSC.

Applications

- ❖ Glass transition
- ❖ Melting points
- ❖ Crystallization time and temperature
- ❖ Boiling points
- ❖ Thermal stability
- ❖ Purity
- ❖ Degree of cure

Modified PET

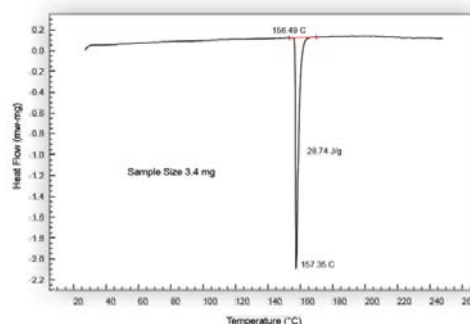
This modified PET is an excellent example of the types of analysis that can be done in the DSC. The glass transition is analyzed showing onset, midpoint and a selected endpoint. Crystallization is the second peak with temperature of 127.34 °C showing area analysis as well as temperatures. Finally the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



- ❖ Rate of cure
- ❖ Oxidative stability
- ❖ Heat of fusion
- ❖ Heat of reactions
- ❖ Heat capacity
- ❖ Effects of additives
- ❖ Polymer blends
- ❖ Effect of recycled materials

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.



Key Features



● DSC Furnace

- High sensitivity heat flux plate
- Very low mass furnace
- Mineral insulated furnace



● Powerful Heat Control

- Solid silver block
- Integral cooling jacket
- Multiple sensor plate designs available
- Dual PID loops for temperature control
- Powerful heating rates up to 200 °C/min
- Manual or automatic cooling

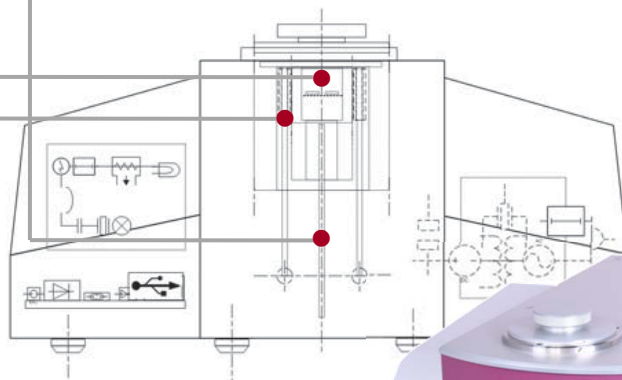


● Facilities

- Preheated purge gas
- Blanket purge
- Multiple types of sample pans
- Small instrument footprint

◆ Options

- MCA(Mechanical Cooling Accessory) down to -90 °C
- Liquid nitrogen cooling attachment
- Sample Crimper and sealer
- Automatic GSA (Gas Switching Accessory) up to 4 gases



Specifications

Temperature : Typically -150 °C to 725 °C
Temperature accuracy : 0.1 °C
Temperature Precision : 0.1 °C
Sensitivity : <0.5 μ W
Stability : 1 mW ambient to 550 °C
Heat flux plate material : Chromel or Constantan

Sample and reference thermocouples : Chromel/Alumel (Type K)
Furnace thermocouple : Type K
Dual PID control
Programmed rate : 0.1 ~ 200 °C/min
Typical rate ; 5 to 20 °C/min
Dimensions : 535 mm(W) x 370 mm (D) x 250 mm (H)

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