

AE-DSC600S Differential Scanning Calorimeter

Introduction to the instrument

Differential scanning calorimetry method (heat flow type DSC), as a classical thermal analysis method of thermal effect under controlled program temperature, has been widely used in various research and development, process optimization, quality control and failure analysis in the field of materials and chemistry. Using the DSC method, we are able to study the phase transition of inorganic materials, the melting of polymer materials, the crystallization process, the polycrystalline type phenomenon of drugs, the solid / liquid phase ratio of food such as oil, etc.



Instrument use

Measure the physical and chemical changes related to heat, such as glass transition temperature, melting point, melting temperature, crystallization and crystallization heat, reaction heat of phase transition, thermal stability of products, curing / crosslinking, oxidation induction period, etc.

Main Features

- * The whole machine integrated design reduces the signal loss and interference, greatly improves the signal sensitivity and resolution, and can obtain a more stable baseline.
- * Equipped with imported high frequency kernel control processor, the computing processing speed is faster, more efficient control.
- * The imported high sensitivity sensor effectively improves the sensitivity and accuracy of DSC signal.
- * The independent atmosphere control can be set by software intelligence, the instrument automatically switch the gas path system, the experimental efficiency is higher.
- * The lower computer and the upper computer of the equipment system have the multi-point temperature correction function, which meets the needs of different experimental occasions and improves the accuracy of the temperature test.
- * With two experimental modes of FTC and STC, the temperature control is more friendly and flexible, which can meet the needs of different application scenarios and different experiments, the control of the experimental process temperature is more accurate, and the analysis of the sensor signal is more efficient.
- * The fully controlled temperature system adopts the optimized adaptive dynamic PID algorithm, which greatly avoids the disadvantages of traditional PID algorithm that requires manual adjustment and improves the robustness of dual-mode temperature control.
- * The 12th order program temperature control setting makes the experimental methods more diversified.
- * The sampling frequency of the sensor signal can be set from 1~10Hz, the experimental method is more flexible and the data is more controllable.
- * Independent dual temperature sensors can simultaneously test the furnace body temperature and the sample temperature, respectively.
- * The equipment system can be used for heating, cooling and isothermal related material experiments.
- * The instrument adopts USB two-way communication, supports self-recovery connection, and intelligent software design, with the baseline deduction function, automatic drawing of the experimental process, and intelligent realization of various data processing, such as heat enthalpy calculation, glass transition temperature, oxidation induction period, melting point and crystallization of substances, and so on.

Technical parameter

1	DSC range	0~±2000mW
2	temperature range	Room temperature of ~600°C
3	toggle rate	16.6Hz
4	heating rate	0.1~100°C/min
5	temperature resolution	0.001°C
6	temperature fluctuation	±0.01°C
7	DSC noise	0.001mW
8	DSC resolution	0.01μW
9	DSC definition	0.001mW
10	DSC sensitivity	0.001mW
11	Experimental mode	FTC, STC are arbitrarily set
12	Procedure temperature control	The whole stage is 12 order temperature control flexible setting
13	Temperature control method	Heat up, constant temperature, and cooling
14	scan type	Heating up, cooling, and isothermal scanning
15	Atmosphere control	The atmosphere of the two paths can be set freely, and the instrument can automatically switch
16	display mode	24bit color 7-inch LCD touchscreen display
17	data interface	Standard USB interface
18	sampling rate	1~10Hz programmable
19	Instrument calibration	The lower and upper computers have the multi-point temperature correction function at the same time
20	Parameter standard	With standard materials, users can correct the temperature and enthalpy by themselves
21	Instrument size	490*390*215mm

Reference standard

GB/T 19466.2-2004 / ISO 11357-2: 1999 Part 2: Determination of glass transition temperature;

GB / T 19466.3 2004 / ISO 11357-3:1999- -Part 3: Determination of melting and crystallization temperature and thermal enthalpy;

GB / T 19466.6-2009 / ISO 11357-3:1999 Part 6 Measurement of oxidation induction time (isothermal OIT) and determination of oxidation induction temperature (dynamic OIT).