

News Release

FOR IMMEDIATE RELEASE

Introducing the NEXTA® DSC Series of Thermal Analyzers for Inspection, Analysis and High-Precision Measurement of Trace-Level Samples

Tokyo, October 27, 2020 – Hitachi High-Tech Corporation today announced that Hitachi High-Tech Science Corporation (President: Sukehiro Ito / Hitachi High-Tech Science) is launching the NEXTA DSC Series of thermal analyzers in Japan and overseas*¹. The NEXTA DSC Series delivers high-precision measurements through world-class*² sensitivity and baseline repeatability*³.



【Thermal Analyzer NEXTA DSC】

In recent years, materials and raw materials have become increasingly sophisticated and complex, leading to more varied and complex demands for thermal property analysis using thermal analyzers. Thermal property analysis shows how the functionality and effectiveness of all sort of materials, from those used in basic research through to those used in product development, changes when the material is heated or cooled. In the failure analysis of increasingly high-performance and miniaturized electronic components, the analysis of trace-level samples and the measurement of their constituent parts requires high sensitivity for highly precise measurements, and high baseline performance that proves the stability and repeatability of measurements. In addition, higher baseline performance is required when measuring high-performance polymers and high-performance films, which are used in a wide range of fields including automotive and aviation, in order to precisely measure the thermal properties of the polymers.

As such, thermal analyzers are used in a variety of applications, including research and development, quality control and failure analysis of organic materials such as plastics, composite materials and pharmaceuticals, and inorganic materials such as

ceramics and alloys. The new NEXTA DSC Series has the following key features:

1. Unique DSC Sensor for High-Sensitivity Measurements

The NEXTA DSC600 has our own proprietary thermopile-type DSC sensor built in, using differential scanning calorimetry (DSC signal) temperature sensor thermocouples connected in series and multiplexed (a thermopile) to achieve a high sensitivity of 0.1 μ W or lower, enabling measurement of even smaller samples. The NEXTA DSC600 with its built-in thermopile-type DSC sensor is the high-end model, offering high-resolution and industry-leading world-class sensitivity, making it ideal for more advanced materials development and failure analysis. The NEXTA DSC200 is the standard model, providing high sensitivity and stability but with a more affordable sensor. It is used in a wider range of applications, and is ideal for product shipping and receipt inspections, quality assurance and quality control.

2. Furnace Structure Providing Stable Baseline Repeatability

The NEXTA DSC600/200 uses a furnace structure designed with seamless connections from the heat sink in the heater to the cooling system, and also uses a low-heat-capacity three-layer metal walled structure. This structure provides world-class stability, proven by its baseline repeatability of $\pm 5 \mu$ W in the electric cooling system's -50 to 300°C measurement range, enabling decisive detection of the thermal properties of trace-level components with high precision.

3. Real View® for Low-Temperature Observation of Samples

The Real View Sample Observation Unit has a built-in two-megapixel high-resolution camera that supports localized observation within a sample. The viewport (observation window) has a heating mechanism that extends the measurement range from the conventionally observable range of room temperature and above down to the low temperature of -50°C. This enables you to observe processes such as the melting and glass transition^{*4} of samples at low temperatures, supporting a wide range of measurement needs.

As a member of the Hitachi High-Tech Group, Hitachi High-Tech Science will quickly grasp our customers' cutting-edge needs, and continue to create high-value-added focused solutions in the field of Bio/Medical and Safety/Security etc. by utilizing "analytical technology". Hitachi High-Tech Science aims to expand its business worldwide, continually developing and providing equipment focused on the issues faced by our customers, who are ever individualizing and advancing.

* “NEXTA” and “Real View” are registered trademarks of Hitachi High-Tech Science in Japan, the United States, the EU, and other countries.

*1 Sales start date differs depending on the region.

*2 Hitachi High-Tech Science study (as of October 2020)

*3 Baseline repeatability: The ability to repeatedly reproduce the measured data of a sample with high precision.

*4 Glass transition: Changing from a glass state to a rubber-like state.

NEXTA DSC website

https://www.hitachi-hightech.com/global/product_detail/?pn=ana-nexta-dsc

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