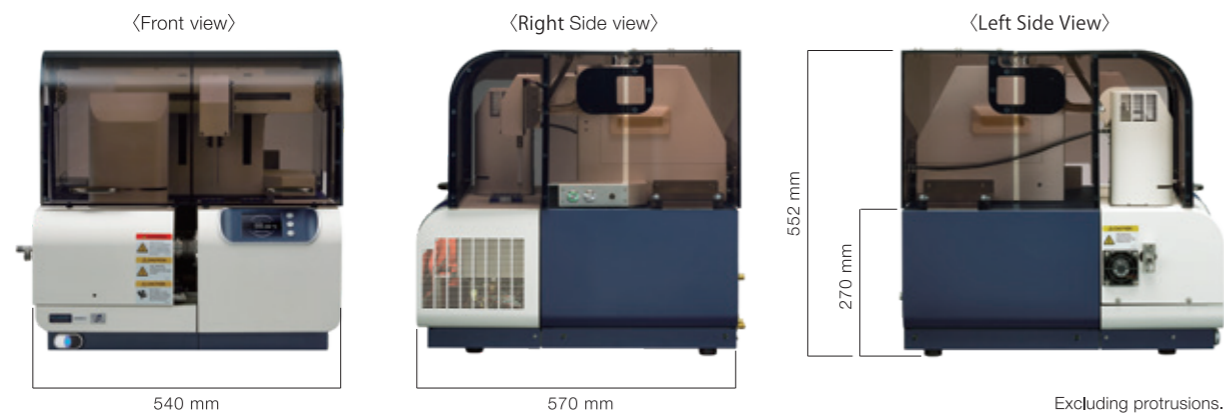


Specifications

	STA200	STA200RV	STA300
Balance Type	Horizontal Differential Type		
Temperature Range	Ambient ~ 1100°C	Ambient ~ 1,000°C	Ambient ~ 1,500°C (Regular Use ~ 1300°C)*
TG Baseline Drift	Ambient ~ 1000°C Heating <10 µg 1000°C Isothermal Hold <10 µg		
TG Baseline Repeatability	<10 ug		
DSC Function	Standard		
Specific Heat Capacity Measurement	Available (Optional)		
Temperature Precision	+/-0.07°C		
Temperature Accuracy	+/-0.2°C		
Real View®	N/A	Optional	N/A
Gas Control	Integrated Mass Flow controller		

*When heated repeatedly over 1300°C many times, the furnace consumption may be accelerated due to evaporation of heater wire. Replacement and repair related to furnace consumption will incur charges.

STA200RV (Appearance with Auto Sampler and safety cover attached)



Science for a better tomorrow

Note: To ensure safe operation, follow the instruction manual when using the instrument./ The price varies depending on the specification and configuration./ System specification are subject to change without notice./ "Real View" is a registered trademark of Hitachi High-Tech Science in Japan and other countries./ The PC monitor shows composite images.

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Science for a better tomorrow

Hitachi High-Tech Science

Thermal Analysis advances to the NEXT stage

Applying cutting edge technologies to a wide range of fields and applications, NEXTA STA combines high precision and high sensitivity with excellent usability.

Hitachi High-Tech Science, an established fixture in the field of thermal analysis known for meeting the needs of users, is now advancing to the next stage. The first step in that evolution is the NEXTA STA, which was created from cutting edge technologies and an abundance of real-world experience. This new system delivers the best baseline stability in the industry, with a baseline drift of 10 μg or less, by employing a newly designed furnace and advanced balance stabilization technology. Through improvements that provide unparalleled ease of use and excellent performance, this cutting edge technology can be easily applied to a wide range of quality control purposes as well as research and development fields of such as polymer materials, inorganic materials, and pharmaceuticals.



Simultaneous Thermogravimetric Analyser(TG-DSC)

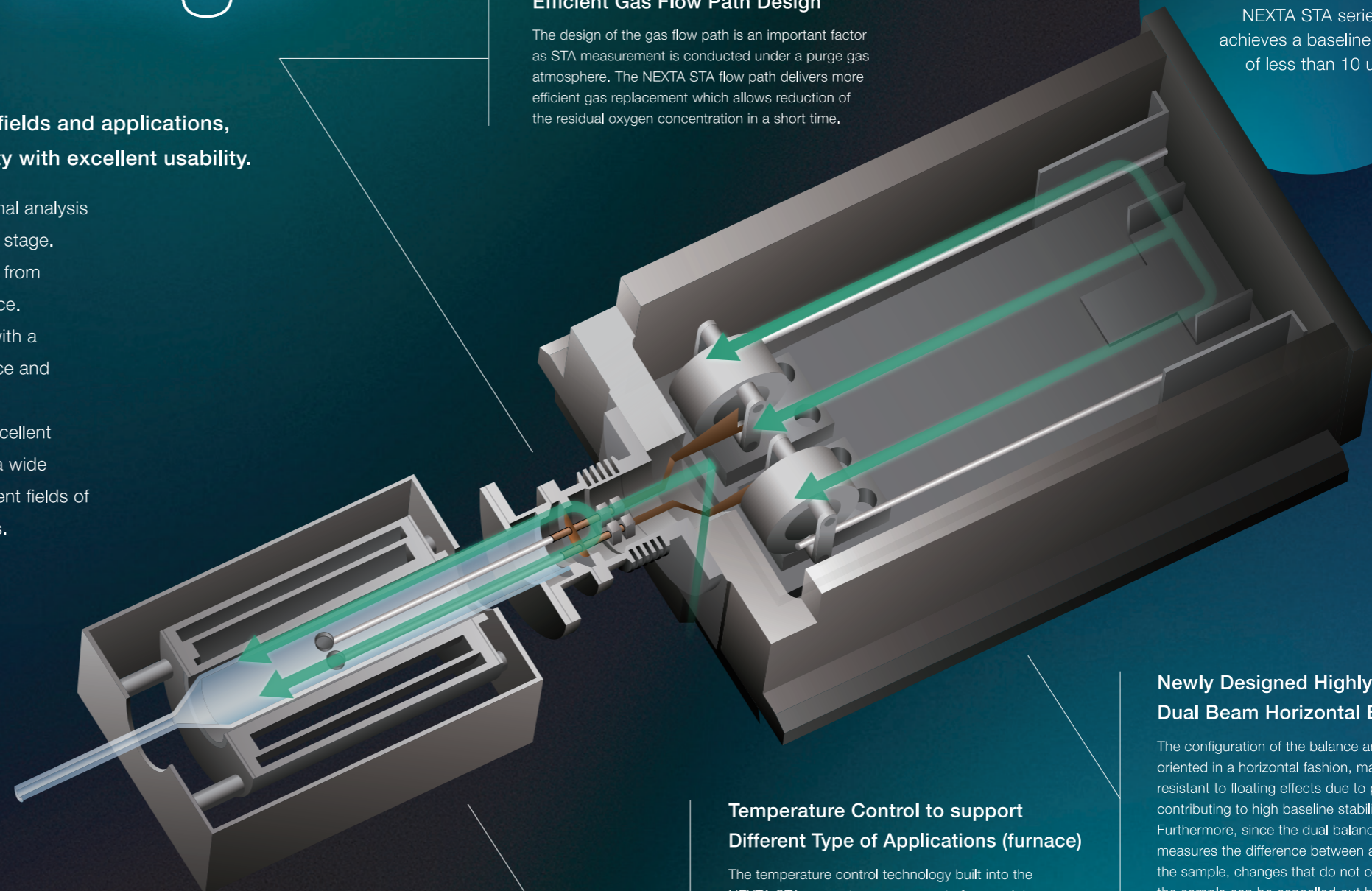
NEXTA STA

Efficient Gas Flow Path Design

The design of the gas flow path is an important factor as STA measurement is conducted under a purge gas atmosphere. The NEXTA STA flow path delivers more efficient gas replacement which allows reduction of the residual oxygen concentration in a short time.

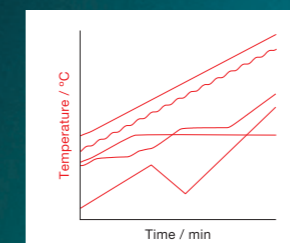
World Class Baseline Performance

NEXTA STA series achieves a baseline drift of less than 10 μg



Temperature Control to support Different Type of Applications (furnace)

The temperature control technology built into the NEXTA STA supports measurements for a variety of applications, including normal measurement by heating the sample at a constant rate, isothermal measurement, controlled rate thermal analysis (CRTA), and modulated temperature control.



Newly Designed Highly Reliable Dual Beam Horizontal Balance

The configuration of the balance arms, which are oriented in a horizontal fashion, makes them resistant to floating effects due to purge gas, contributing to high baseline stability. Furthermore, since the dual balance design measures the difference between a reference and the sample, changes that do not originate from the sample can be cancelled out by the reference side, giving a highly reliable measurement system that provides a more stable baseline.

Newly Adopted Temperature Control Technology (Balance Control Unit)

New technology has been developed for maintaining the balance unit at a constant temperature. Keeping the temperature of the balance unit constant enables measurement under an environment that is always consistent, thus increasing the stability of the baseline.

Better Functionality / Automation

See your Science
in Real Time

Real View® Sample Observation Thermal Analysis

“Visibility” for better “Measurement”

In conventional thermal analysis, it is not possible to view the sample during measurement. Real View makes it possible to observe the changes in the state of the sample during measurement through a continuous sequence of images using a built-in high resolution camera. Digital zoom is also available.

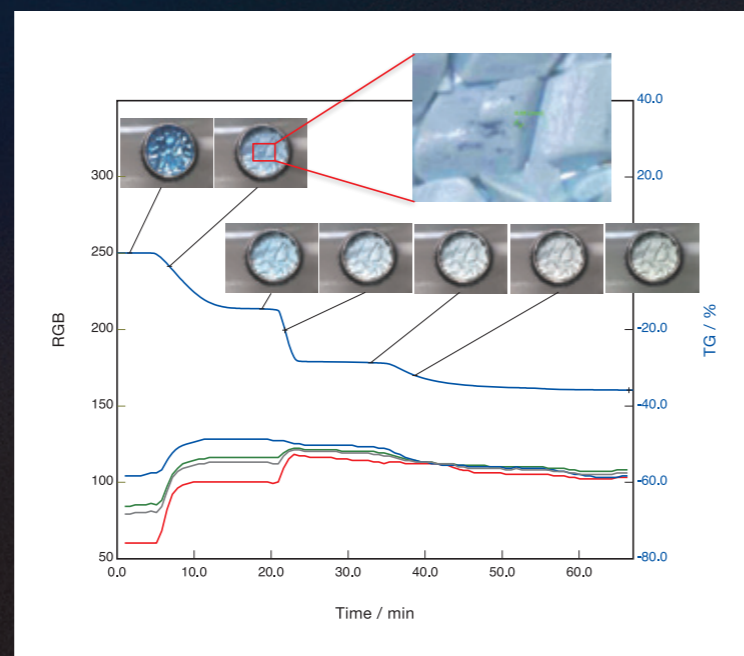
The image data and thermal analysis data for the sample can be linked together, enabling an extra level of data analysis. Furthermore, image analysis can be performed in the software to provide critical information, including length measurement and color analysis, in addition to digital zoom.



<Real View>

Image data and digital zoom function

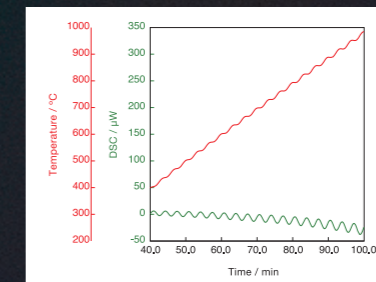
This example demonstrates analysis of changes in the sample color using Real View images and color analysis. Casual observation indicates the blue color might be disappearing, however as the graph shows, the values of G and R color elements are actually shifting closer to the value of the B element, which makes the sample appear white. The digital zoom further helps to show that some parts of sample remain blue whereas most of the sample changes its color from blue to white.



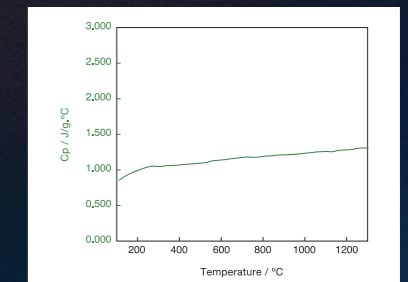
DSC Differential Scanning Calorimeter

Specific heat capacity determination with high accuracy over a wide range of temperatures

The NEXTA STA is equipped with a standard DSC measurement function. The DSC signal supports not only peak integration calculations, but also specific heat capacity measurement over a wide range of temperatures.



Modulated temperature control



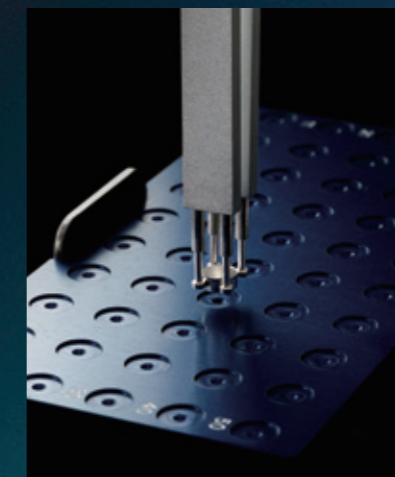
Cp conversion

Autosampler/Automatic Analysis

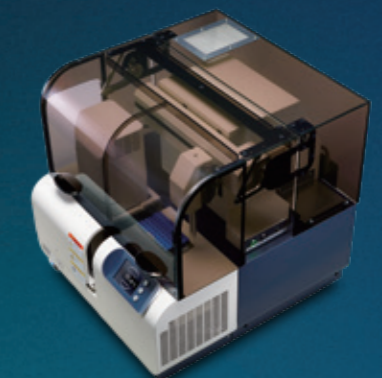
Delivering automatic analysis with highly efficient measurement through a reliable and smooth transport

The Hitachi High-Tech Science autosampler has an established reputation for providing reliable and stable sample transport performance, and this technology has been adapted to the NEXTA series. It offers secure transport by gripping the sample pan firmly with 4 fingers, and it delivers high throughput when used in combination with the auto-analysis software function.

An autosampler safety cover is provided as an option for increasing the reliability and safety of measurements.



Sample pan transported by Autosampler

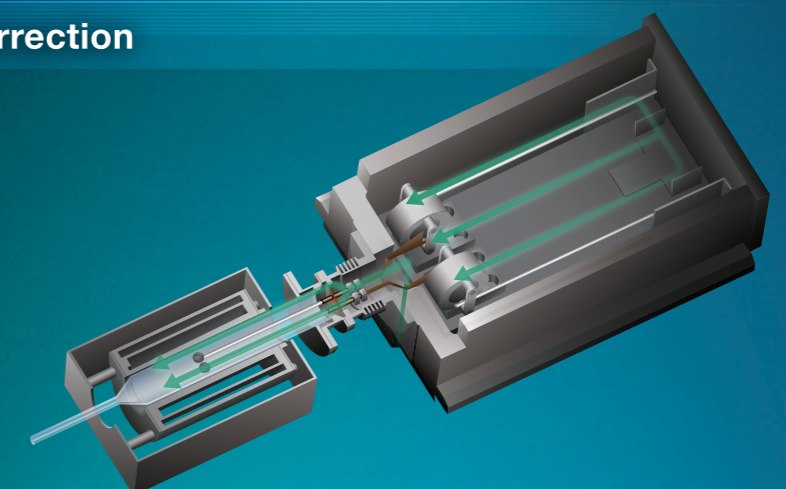


Autosampler Safety Cover

Thermogravimetry (TG) Correction

Built-in advanced digital correction technology to enable highly accurate measurement with high sensitivity

Our digital correction technology, well-known for its quality, is also built into the NEXTA. This function performs digital processing of the reference and sample measurement signals and is able to cancel drift in the TG signal that occurs due to expansion of the beam arms, providing high precision thermogravimetric measurements.



Extensibility/Multipurpose usage

See your Science
in Various Fields

Mass Flow Controller

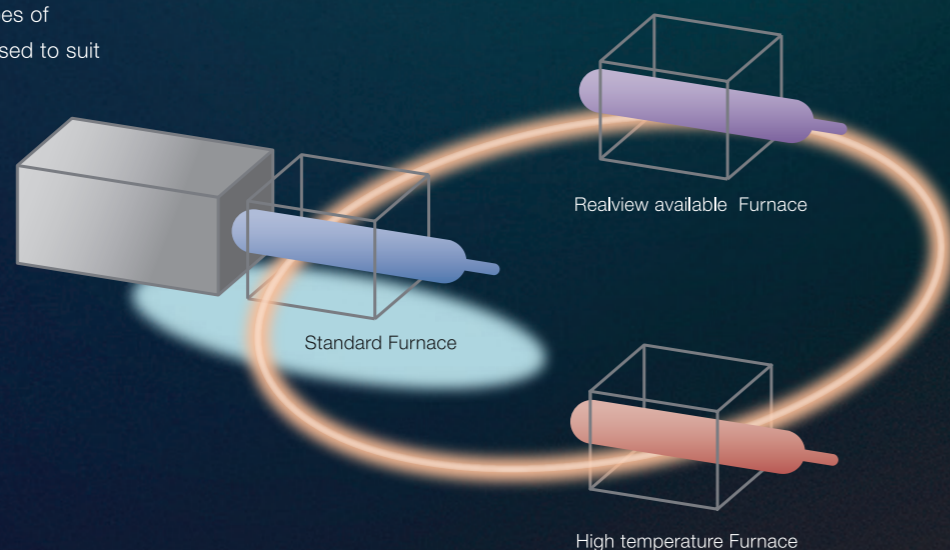
Mass flow control of the purge gas is equipped as a standard feature. This enables efficient gas purge not only by simply switching on and off but also through mass flow control of the purge gas.

	Standard (1-MFC)	Optional (3-MFCs)	Optional (3-MFCs-He)
Type of maximum gas	2	3	3
Simultaneous flow of two gases	Unavailable	Available	Available
Compatibility with He Gas	Unavailable	Unavailable	Available*

*Only 1 of the 3 lines is compatible with He gas.

Heating Furnace Compatibility

The NEXTA STA provides 3 types of heating furnaces that can be used to suit the application and need.



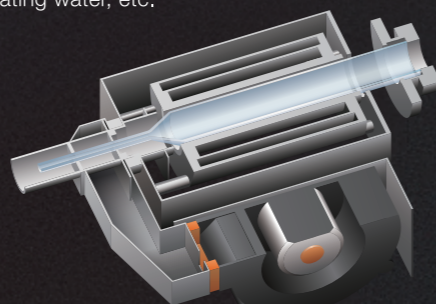
Balance Beam Replacement

NEXTA STA also employs our highly rated one-touch balance beam replacement. This enables you to replace the beam by yourself.



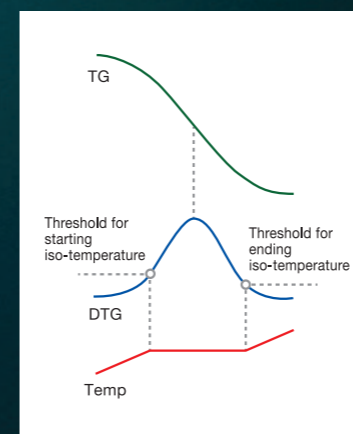
Fan Cooling

Fan cooling is provided as a standard feature to recover the furnace after heating to high temperatures. This allows it to be used without providing additional facilities such as compressed air, circulating water, etc.

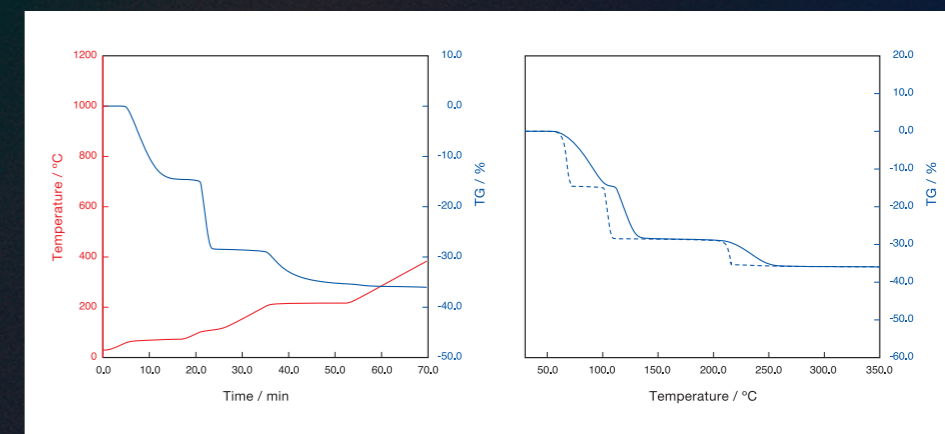


Controlled Rate Thermal Analysis (CRTA)

This is a measurement method that automatically changes the heating rate depending on the reaction rate of the sample. This can be used for slow reactions and to isolate reactions when multiple reactions overlap.



Data of temperature signal

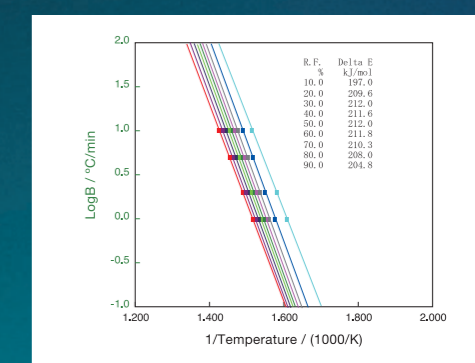
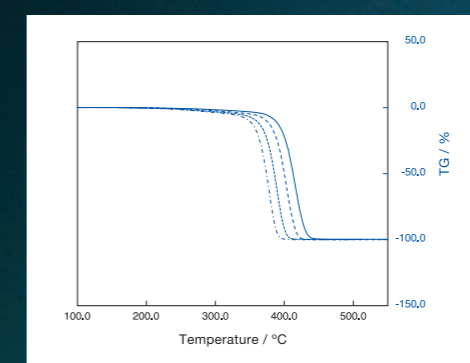


Data of TG

Normal data and CRTA data

Reaction Kinetics Analysis

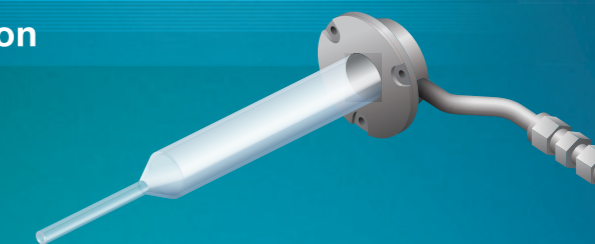
This is an analysis technique for calculating the activation energy and isothermal degradation time from data for multiple different heating rates. This is used to predict the amount of time over which the decomposition reaction of a sample will proceed at some fixed temperature.



Data of Reaction Kinetics Analysis

Measurement under Humid Condition

An option is available for introducing humidified gas when evaluating samples where the physical properties, reaction rates, etc. are affected by humidity.



Software

Software for NEXTA

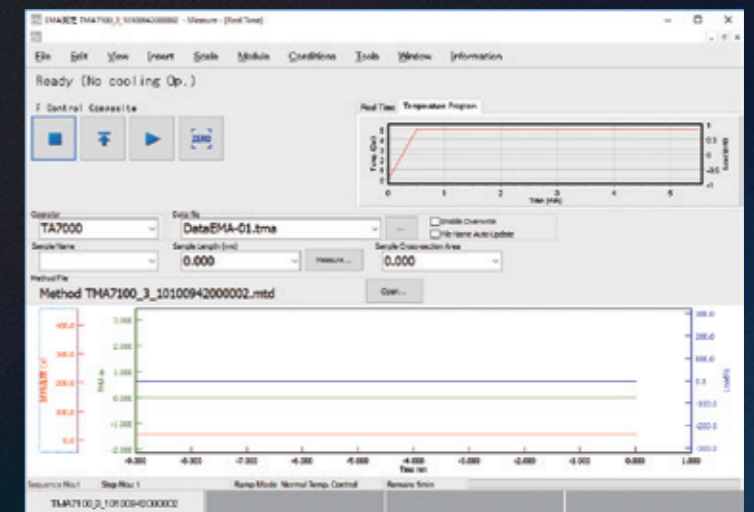
The software for NEXTA can be easily operated to support everything from simple use to complex applications. The software offers a variety of usage methods for different user levels, including a guidance function that enables beginners to perform measurements according to standard test methods such as JIS, ISO, ASTM etc. A simple measurement mode that is optimized for routine measurements and operation via tablet is also available.

- Guidance function that provides step-by-step instructions from measurement to analysis
- Simple measurement mode that delivers an operating environment suitable for routine measurements
- Touch panel operation and tablet support



Simple mode

In simple mode, by setting measurement conditions in advance, users just need to input minimum sample information in one screen and the measurement can be started instantly. Using this mode not only helps minimize complicated operations, such as setting up and checking detailed experimental conditions, but it also reduces both total process time and operator entry mistakes.



Touching Operation

The software for NEXTA supports touchscreen operation on PC and tablets. By using portable devices, even if users are at a remote location, they can still check the progress of the measurement and analyze the acquired data.



Guidance Function

-Standard-Based Guidance

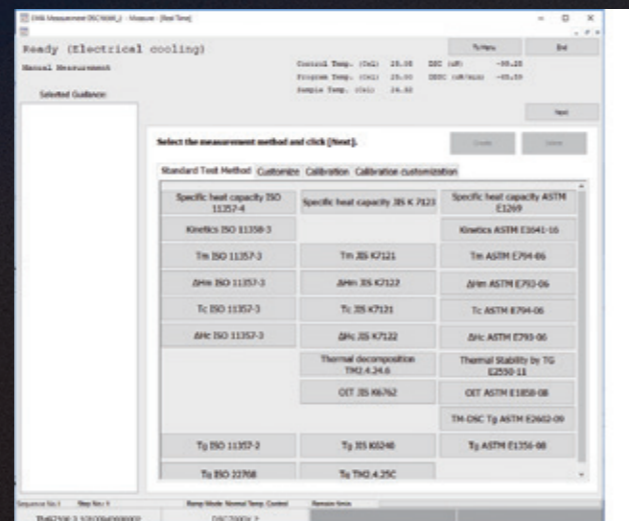
With Standard-Based Guidance, users will be walked-through the processes to perform standard methods measurements according to organizations such as JIS, ISO, ASTM etc. Conditions such as sample weight, temperature range, scanning rate, gas flow rate, etc. called out in standards are set as default measurement suggestions.

-Calibration Guidance

Users will be walked through the process to calibrate the instrument. For temperature calibration, analysis of data will be done automatically, and analyzed data will be used to adjust calibration automatically. Users can calibrate easily and correctly.

-Custom-Made Guidance

Users can create their own guided standard methods, so anyone can measure samples easily (and correctly). By following explanations in the custom-made guidance, such as sample preparation method, sample weight, selection of sample container, etc., different operators can make the same types of measurements repeatedly.



Other Functions and Features

Many other user-friendly functions and features are included which meet a wide variety of user needs. The reporting feature enables the delivery of multiple data types at the same time as well as generating customizing report formats.

- Multi-customization function
- Active scale
- Multiple output function
- Free license

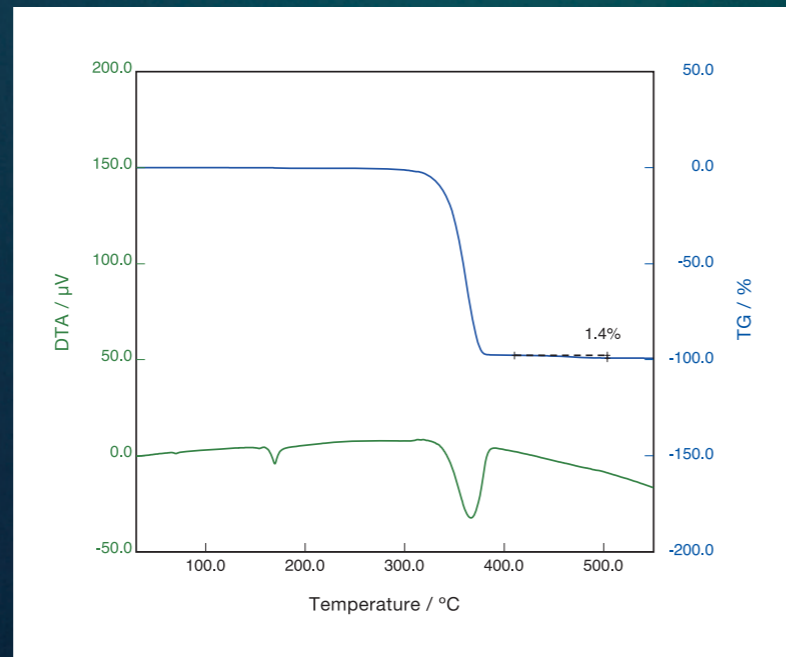


Application Data

Polymers

Quantification of Trace Amounts of Foreign Matter in Plastics

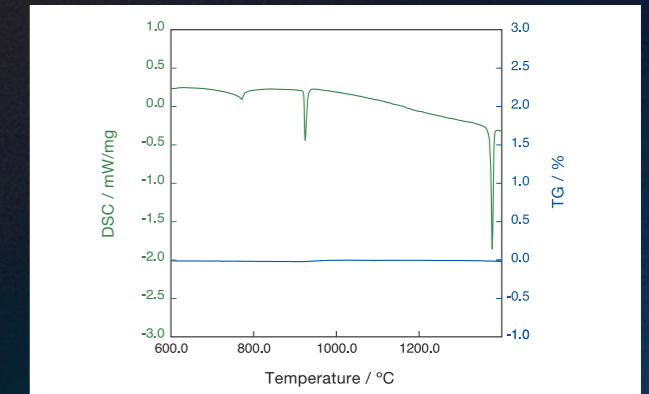
TG is used to quantify trace amounts of contamination when foreign matter becomes mixed into plastic. With NEXTA STA, which has a highly stable baseline, it is possible to quantify even small amounts of foreign matter (~1% content) to high precision.



Inorganic Material

Measurement of Metals under an Inert Atmosphere

Many inorganic materials undergo thermal reactions at high temperatures, and STA can be used for evaluating these reactions. For metallic materials in particular, since the reaction temperature may shift due to oxidation, it is important to perform measurements while preventing oxidation using an inert atmosphere. The rapid gas turnover enabled by the new gas flow path designed into NEXTA STA offers measurement under low oxygen environments, which enables accurate measurement of inorganic materials.

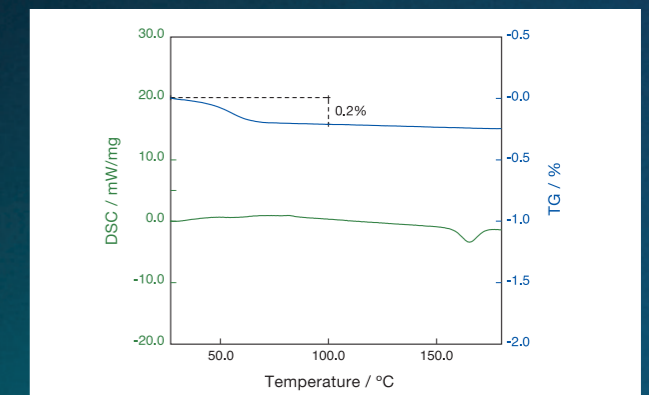


Pharmaceuticals

Quantification of Water Content

Thermal analysis can be used in controlling pharmaceutical quality, and STA can be used as a method to quantify water content of materials.

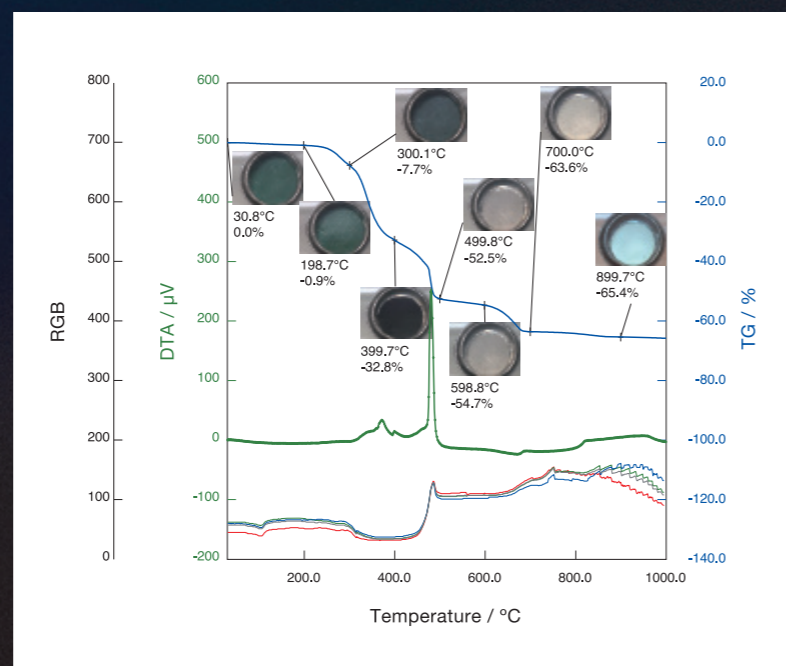
The NEXTA STA, which offers excellent baseline stability, is able to quantify the drying loss with good precision even for small samples. Furthermore, since the baseline is flat, it is possible to determine whether or not there is loss by thermal decomposition while holding at elevated temperatures.



RealView® Measurement of Coatings

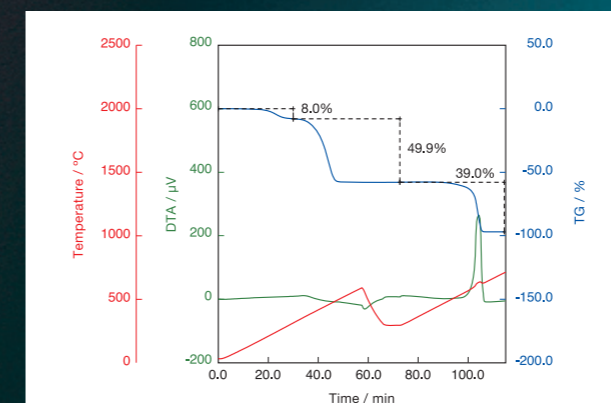
RealView reveals not only the changes in morphology during measurements, but also changes in color. This provides a means for evaluating the temperature at which a sample color changes and the changes in color certain products undergo during temperature increases. This is useful in colored products such as coatings, ink, and colored plastic.

In the example here, a coating material was found to change color from green to black to gray to white as the temperature increased.



Rubber

Component Quantification of Rubber



Foodstuffs

Oxidation Induction Time Measurement of Oils and Fats

