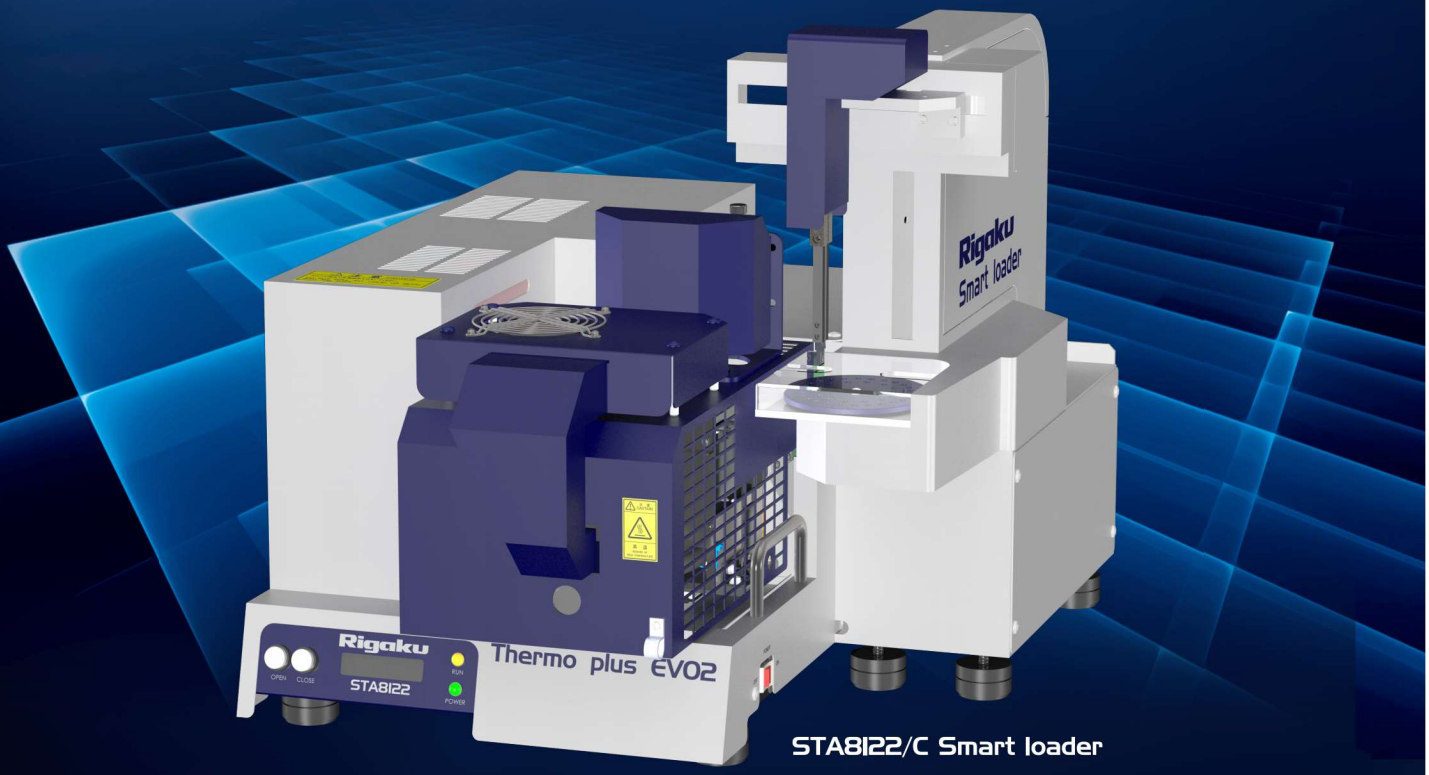
Rigaku
Leading With Innovation

STA8122

Simultaneous Thermal Analyzer
TG-DTA/DSC
Thermo plus EVO2 series



STA8122/C Smart loader

- **Various combinations** with extensive optional attachments
- **Sample observation** unit can be easily installed on standard configuration of STA
- **DSC heat flow** is calibrated and adjusted at different temperatures using certified reference materials
- **Slightest mass changes** can be detected with high precision by horizontal differential triple coil method
- Easy maintenance enables a **plug-in type holder** for a smooth replacement

Option for your specific needs

Compact automatic sample changer : Smart loader

Smart loader is available with both standard and sample observation STA8122. It holds up to 24 samples, enabling single measurement and interruption measurement, as well as continuous measurements.

Sample observation unit

The thermal changes in the sample status can be displayed in real time and because the optical visual images can be automatically linked with the data from the thermal analyzers as well as the temperatures, the playback analysis can be carried out just by clicking the data curves. The sample observation unit can be installed without interfering with the automatic sample changer. Sample observation can also be attached to standard / High temperature STA8122.

Sample-controlled thermogravimetric analysis (SCTG)*

Thru the SCTG (dynamic TG) method, we can obtain data with improved separation of reactions and resolution compared to the conventional constant-heating rate method.

*Standardly equipped

Humidity Generator

Combining STA8122 with humidity generator (HUM-1) enables the measurement of heating under constant humidity partial pressure, and the measurement of water absorption rate with changing humidity at a constant temperature.

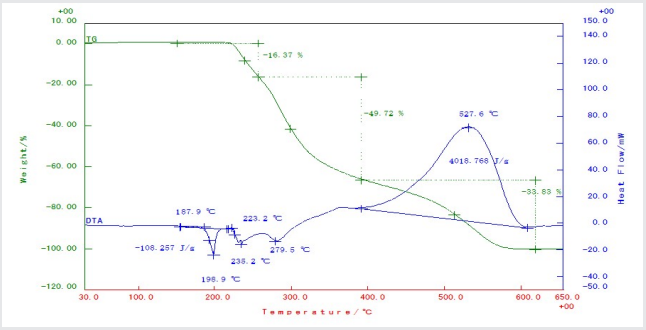
Measurement example

TG-DSC result of sugar measured in air atmosphere

A sharp endothermic peak due to melting of sugar is revealed near 190℃. This phenomenon is followed by endothermic peaks at 235℃ and 280℃ corresponding to two mass losses up to 400℃.

Here, the carbohydrate in sugar loses water and then caramelizes.

It is observed a broader exothermic peak from 400℃ which denotes the combustion of sugar. Thru energy calibration function, the amount of energy of each reaction observed in the thermal behavior of sugar can be quantified as DSC.



Specifications

Model	STA8122 (TG-DTA/DSC)		
Design	Horizontal differential triple coil balance		
Furnace	Standard	High Temperature	Sample observation
Temperature range	Ambient to 1100℃	Ambient to 1500℃	Ambient to 1000℃
Temperature Precision	+/-0.2℃ *1		
Temperature Accuracy	+/-0.5℃ *1		
Heating Rate	0.017-100℃/min		
Furnece cooling (Forced air fan)	1000℃ to 50℃ in <15min	1000℃ to 50℃ in <18min	1000℃ to 50℃ in <15min
DSC Function	Standardly equipped		
Sample Weight	Max. 1g (90μL)		
TG Precision	+/-0.5% *2		
TG Accuracy	+/-1% *2		
TG Resolution	0.03μg		
TG Baseline drift	<20μg *3	<30μg *3	<20μg *3
DTA Range	2000μV		
Vacuum	10Pa *4		
Residual oxygen concentration	20ppm *5		
Automatic sample changer	Number of samples: 24 reference samples: 3 calibration samples: 5		
Sample observation fuction			CCD camera Attachment
Atmospheres	Inert, oxidizing, static, dynamic, vacuum, controlled humidity		
Gas Control	Max 6 mass flow controllers		
Optional instrument specialties	Glove box version (Separate type of balance and control unit)		
Evolved gas analysis	FT-IR couplings		

*超過1350度的量測會減少使用壽命

*以含有量測金屬鋁熔點溫度的檢量線修正金屬鋁熔點量測溫度後誤差值 **修正前為+/- 3 ℃

*DTA-DSC轉換檢量線須由使用者自行使用多種金屬於非大氣環境下建立

*實際可量測範圍為+/-250mg

*常溫下以特殊形狀之標準重量樣品置於載盤中央時

*軟體顯示為0.1ug, 需數位轉檔後才能於檔案內顯示小於0.1ug

*以無樣品的空白基線扣除無樣品的空白基線後的差異值 **未扣除前分別為<40ug, <60ug, <70ug

*建議較常更換保護管以確保鏡頭影像清晰

*主機不含氣體流量或真空等相關控制系統

*1 By melting of metal
*2 By weighting standard weight
*3 With blank correction
*4 Using the evacuation unit (option: decompression measurement)
*5 Using the gas flow unit (option: for hypoxia concentration measurement)

Specifications and appearance are subject to change without notice.

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