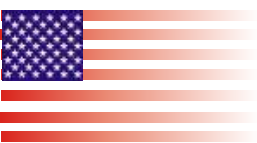




TEG/STA PC1600



thermal analysis  
with **out** limits



LINEAS

TA

**T**hermogravimetry is a technique in which the mass of the sample is monitored against time or temperature while the temperature of the sample, in a specified atmosphere, is programmed.

This technique serves the determination of material compositions.

It is common analysis method in the chemical and pharmaceutical industry. Thermogravimetric analysis (TGA) is performed on rubber, plastic, and ceramics as well as many other materials.

The LINSEIS L81 Platinum STA (simultaneous thermal analysis) can be used to determine simultaneous changes of mass (TG) and caloric reactions (HDSC) of a sample in the temperature range  $-150 \dots 1600^{\circ}\text{C}$ .

The unique characteristics of this product are high precision, high resolution and long term drift stability. The L81 Platinum was especially developed to meet the high demands of the high temperature as well as low temperature applications.

To cover this broad range several specifically designed furnace types are available. Furthermore MS (mass-spectrometer) and FTIR spectrometer couplings can be added to receive unique additional information.



Due to its superior performance, user friendliness and modularity, the L81 Platinum is an indispensable tool for every thermo analytical user.



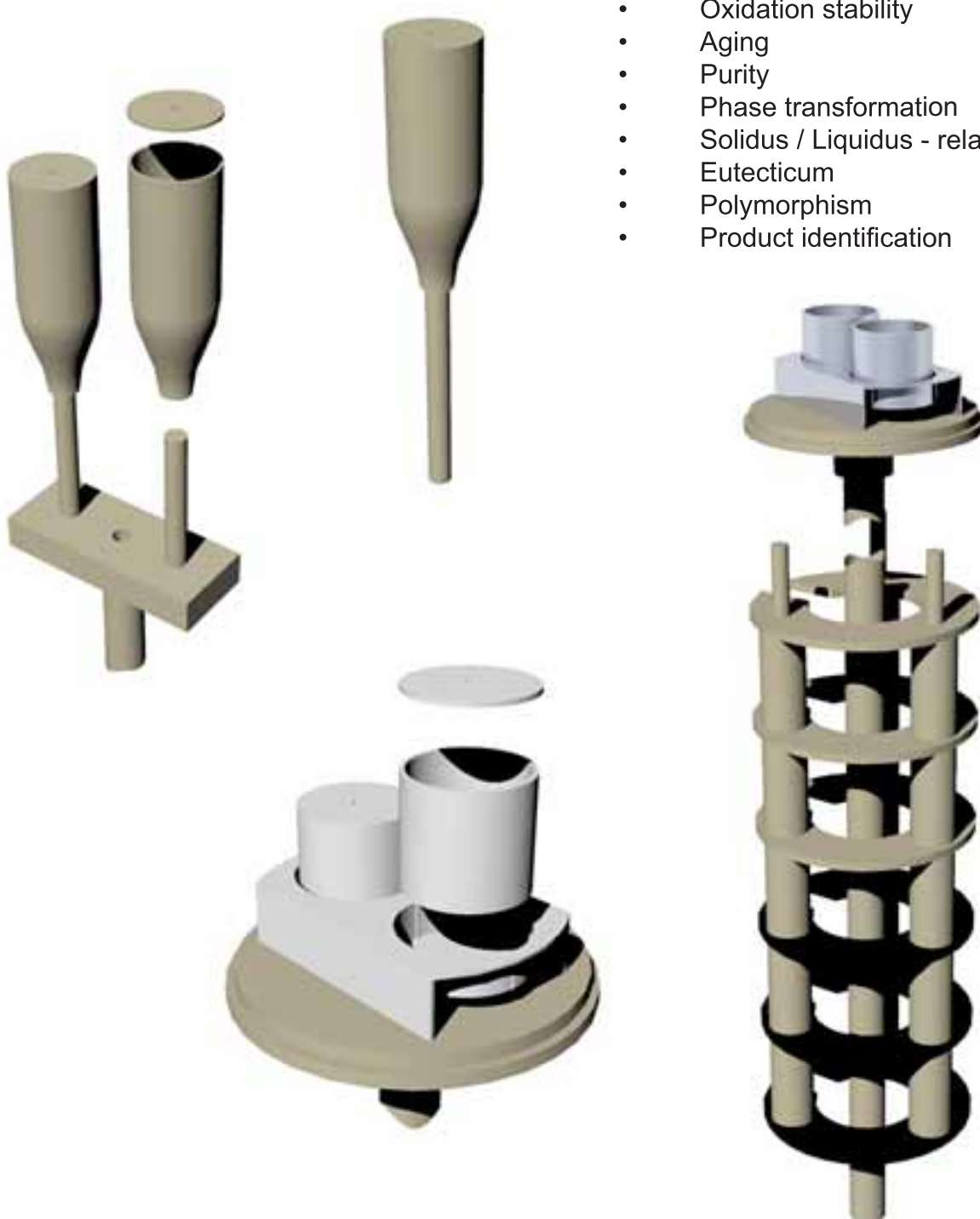
From the combination of TG and DTA or HDSC one receives a broad range of information, such as:

TG:

- Mass change
- Absolute sample temperature
- Temperature difference(sample/reference)

HDSC:

- Enthalpy, melting energy
- Specific heat
- Glass point
- Crystallinity
- Reaction enthalpy
- Thermal stability
- Oxidation stability
- Aging
- Purity
- Phase transformation
- Solidus / Liquidus - relationship
- Eutecticum
- Polymorphism
- Product identification



## Measurement system

The Linseis L81 Thermo balances can be ordered as horizontal, vertical, or both mode of operation. All measurement systems are easily exchangeable to ensure user-friendly and quick system handling.

## Vacuum and controlled atmosphere

The balance design provide for high vacuum ( $10E-5$ mbar), inert, reducing, flowing or humidified atmosphere. Corrosive conditions can be analyzed with proper precautions. The system is capable of adapting residual gas analysis systems using an optional heated capillary.

## Furnace program

The L81 Platinum can be equipped with four easily exchangeable furnaces. This allows measurements in the temperature range  $-150 \dots 1600^{\circ}\text{C}$ .

Stable and reproducible baselines are achieved due to the specially designed heating elements and system setup.

## Sample holders

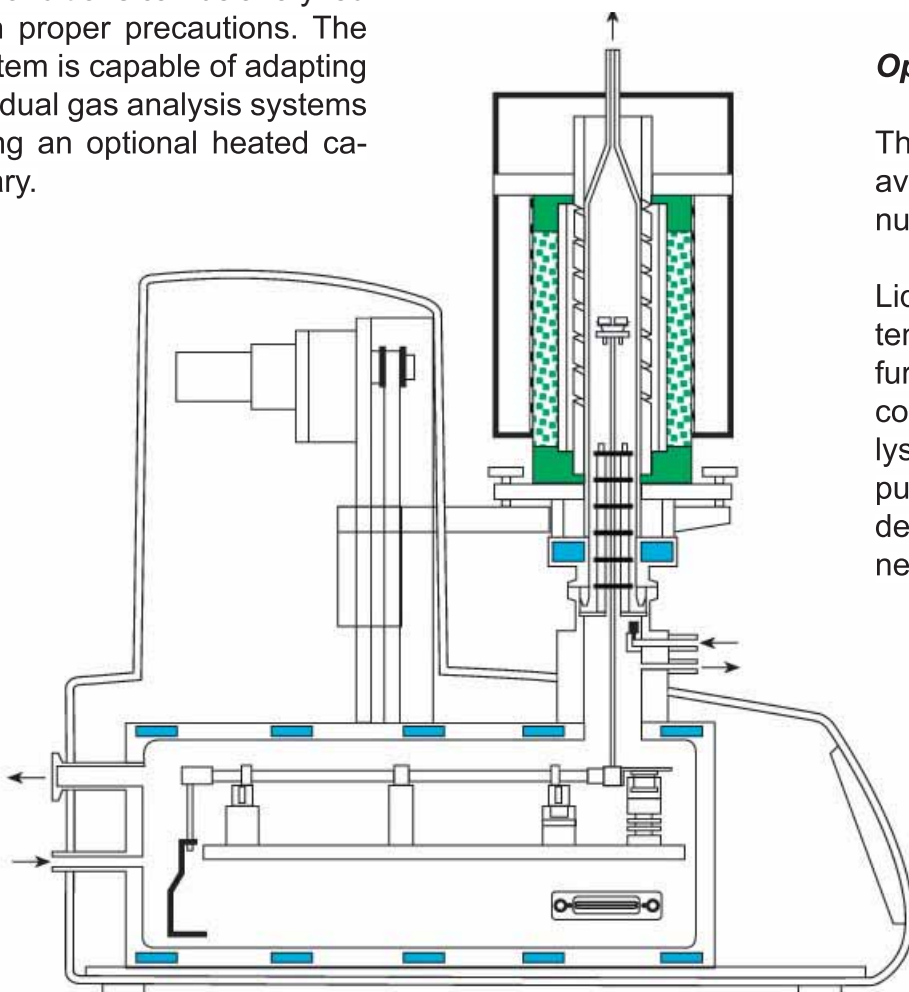
Several sample holders in different configurations are available. Because of the 25 gram capacity there is a clear advantage when measuring heterogeneous samples.

Large amounts of overall sample can be measured to distinguish reactions from lesser components. This combination enables a very high resolution while assuring the best possible sample reactions.

## Options

The following options are available for the L81 – Platinum STA:

Liquid nitrogen cooling system for low temperature furnace (KREG). MS/FTIR coupling for evolved gas analysis (EGA). Turbo-molecular pump: for measurements under highest vacuum and cleanest gas-atmospheres.



All LINSEIS thermo analytical instruments are PC controlled. The individual software modules exclusively run under Microsoft® Windows® operating systems.

The complete software consists of 3 modules: temperature control, data acquisition and data evaluation. The 32 bit software incorporates all essential features for measurement preparation, execution, and evaluation of a Thermogravimetric measurement.

Thanks to our specialists and application experts, LINSEIS was able to develop comprehensive easy to understand user friendly application software.

### Features -Software

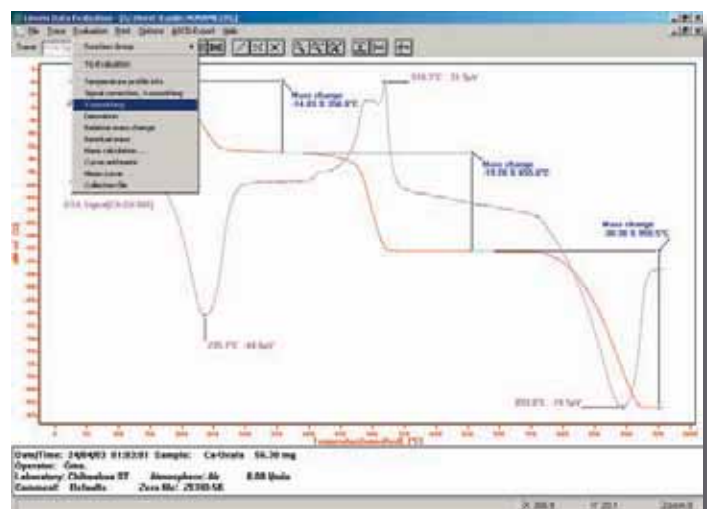
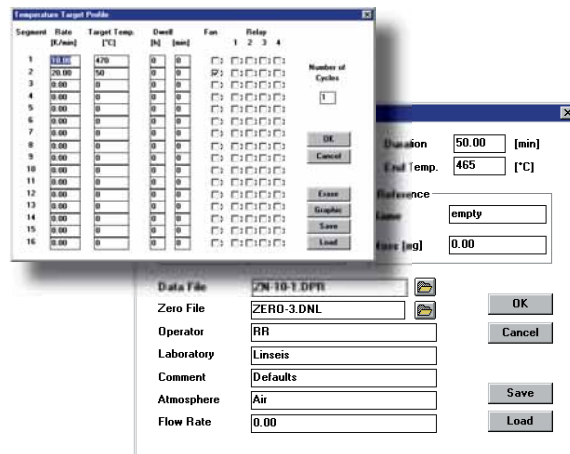
- Program capable of text editing
- Data security in case of power failure
- Thermocouple break protection
- Repetition measurements with minimum parameter input
- Evaluation of current measurement
- Curve comparison up to 32 curves
- Storage and export of evaluations
- Export and import of data ASCII
- Data export to MS Excel
- Multi-methods analysis (DSC TG, TMA, DIL, etc.)
- Zoom function
- 1 and 2 derivation
- Programmable gas control
- Statistical evaluation package
- Free scaling

### TG – Features

- Mass change as % and mg
- Rate Controlled Mass Loss
- Evaluation of mass loss
- Residue mass evaluation

### HDSC – Features

- Glass transition temperature
- Curve subtraction
- Complex peak evaluation
- Multipoint calibration for sample temperature
- Multipoint calibration for change of enthalpy
- Cp calibration for heat flow
- Signal-steered measuring procedures



## ***Furnace program***

<b><i>TemperatureType</i></b>	<b><i>Element</i></b>	<b><i>Atmosphere</i></b>	<b><i>TC-Type</i></b>
-150 – 500°C L81/220	LN2	inert, oxid., red., vac.	K
RT – 1000°C L81/220	Kanthal	inert, oxid., red., vac.	K
RT – 1400°C L81/230	Kanthal	inert, oxid., red., vac.	S
RT – 1600°C L81/240	SiC	inert, oxid., red., vac.	S

## ***Specifications***

### ***Platinum 1000***

### ***Platinum 1600***

## ***Temperature features***

Temperature range	RT – 1000°C	-150 ... 1600°C
Temperature accuracy	+/- 0.25°C	+/- 0.3°C
Temperature reproducibility	+/- 0.2°C	+/- 0.3°C
Heating rate	100K/min	50K/min
Cooling rate 1000 – 50°C	<15 min	< 35 min

## ***Balance***

Sample Size	1, 5 ... 10g	1, 5 ... 25g
Resolution	0.5 µg	0.5 µg
RMS noise	< 1µg	< 1µg

## ***Accessories***

### ***HDSC***

HDSC resolution	0.3, 0.4, 1µW	0.3, 0.4, 1µW
HDSC RMS noise	4, 6, 17.5µW	4, 6, 17.5µW
HDSC sensor type	E, K, S, B	E, K, S, B

### ***DTA***

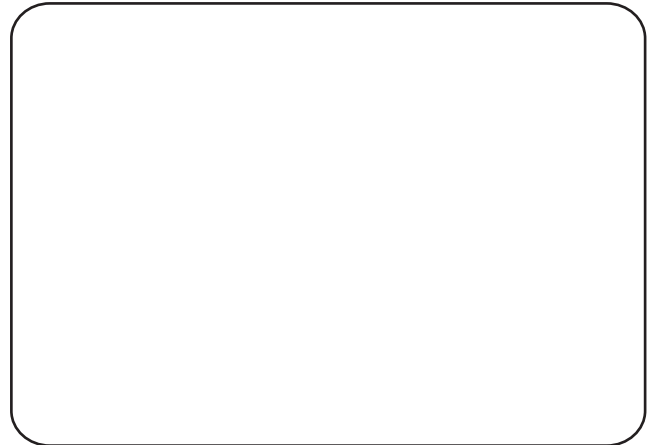
DTA Sensitivity	0.05µV	0.05µV
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Coupling	MS/FTIR	MS/FTIR
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[www.linseis.com](http://www.linseis.com)

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