

LINSEIS
DSC-PLATINUM-PT1600



Differential Scanning Calorimetry, DSC, is well-known as a fast and easy-to-operate thermo analytical measuring technique according to industrial standards such as ISO, ASTM, DIN ... for research & development, quality management, failure analysis, and process optimization.

The DSC PT1600 was developed particularly to measure Enthalpie and Specific Heat (C_p) in the high temperature range (-150 up to 1650°C).

For this broad temperature range a number of different exchangeable furnaces are available.

Furthermore emphasis was placed on an exceptionally stable baseline and highest reproducibility. Due to its unique features the DSC PT1600 is an indispensable tool for quality control and R&D.

The Instrument can be equipped with a number of different exchangeable furnaces, different measuring systems and numerous different crucibles.

Measurements under vacuum, inert, reduced and oxidized atmospheres are possible.

The vacuum tight construction ($10E-5$ mbar) allows quantitative measurements under cleanest gas atmospheres.

Measuring system

User-friendly exchangeable measuring systems such as a DTA sensor and two different DSC sensors are available. Each DSC Sensor is available as (Type E, K, S, B) for the DSC PT1600.

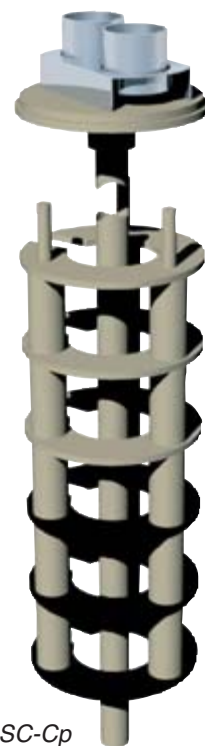
This allows the perfect choice for any application, temperature or atmosphere.



DTA



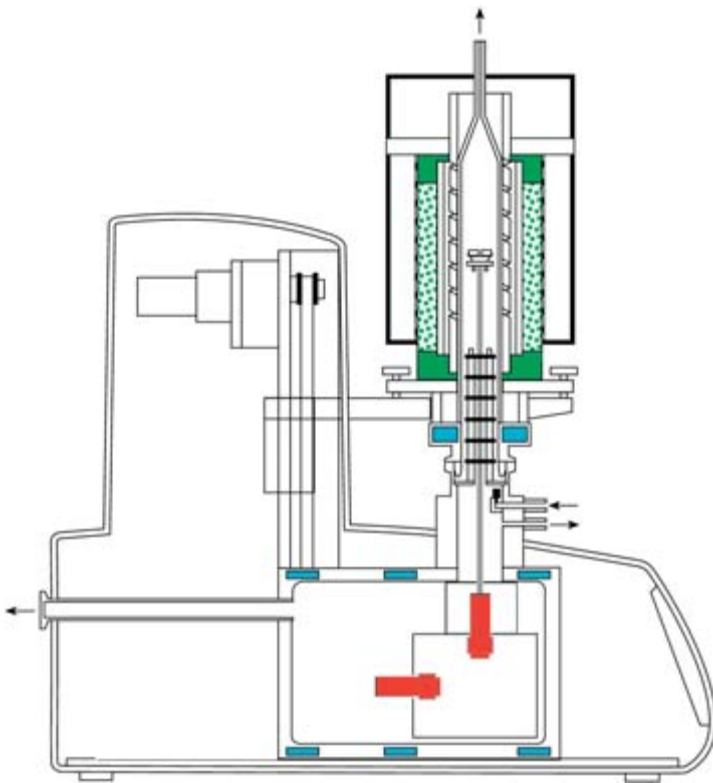
DSC



DSC-Cp



PRODUCT



LINSEIS DSC PT1600 (Cp)

Features

- Temperature range -150°C up to +1650°C
- Different easy exchangeable furnaces
- Different easy exchangeable sensors
- Low temperature model with LN2 cooling or with Intercooler

Options

- Broad selection of crucibles
- LN2 cooling system for low temp. furnace
- Turbo molecular pump (10E-5 mbar)
- Two stage rotary pump (10E-3 mbar)
- Different protection tubes
- Coupling with MS/FTIR

Software

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.

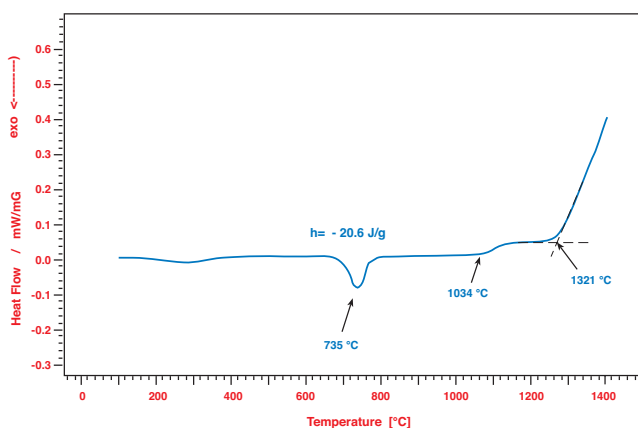
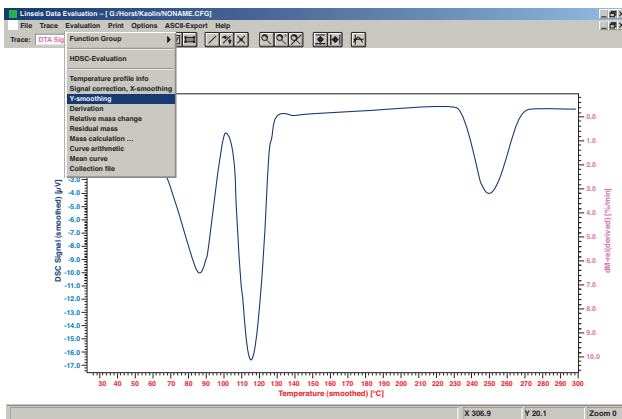
The 32 bit software incorporates all essential features for measurement preparation, execution, and evaluation of a Dilatometer run. Thanks to our specialists and application experts, LINSEIS was able to develop comprehensive easy to understand user friendly application software.

Application

The components used for production of magnetic ferrites are ZnO, Fe₂O₃ and Cr₂O₃. Cr₂O₃ is added for modification of the magnetic and electric properties.

At 735°C the powder forms a mixed ferrit with a spinal structure (exothermal reaction: -20.6J/g). Above 1034°C and 1321°C the heat flow deviates strongly into the endothermic direction due to melting of different phases.

The Linseis DSC PT1600 with the type S-measuring head provides a very stable baseline with an extremely low noise level up to 1450°C. This high sensitivity is essential to perform exact enthalpy measurements and evaluations.



Furnace program

Temperature	Type	Element	Atmosphere	TC-Type
-150 – 600°C	L81/264	Thermocoax	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 – 1400°C	L81/230PT	Precious metal	inert, oxid., red., vac	S
RT – 1600°C	L81/240	SiC	inert, oxid., red., vac.	S / B
RT – 1650°C	L81/240RH	Precious metal	inert, oxid., red., vac	S / B

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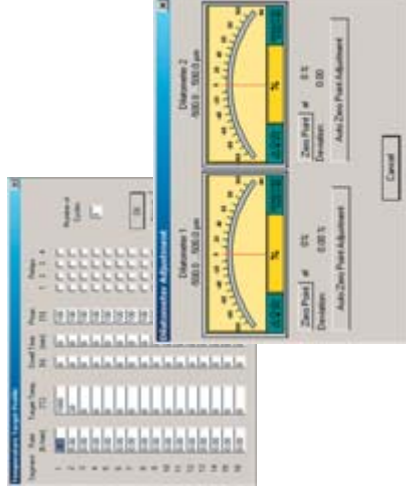
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Products: DIL, TG, STA, DSC, HDSC, DTA, TMA, MS/FTIR, LASER FLASH
Services: Service Lab, Calibration Service

www.linseis.com

TAWIN

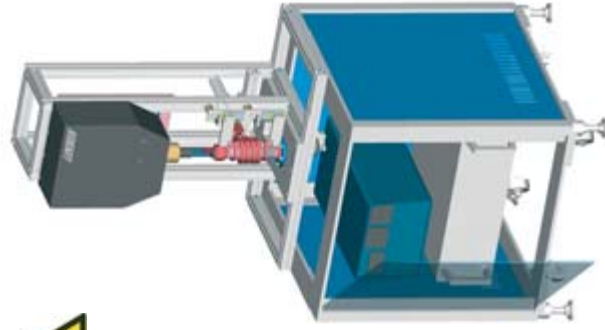
Platinum Software, Thermal Analysis



- Multitasking, multiple module design
- Interchangeable or multiple furnaces
- 32 bit Microsoft Windows™ software
- USB interface or PCI slot interface
- ASCII data export
- Automated unattended operation

LASER

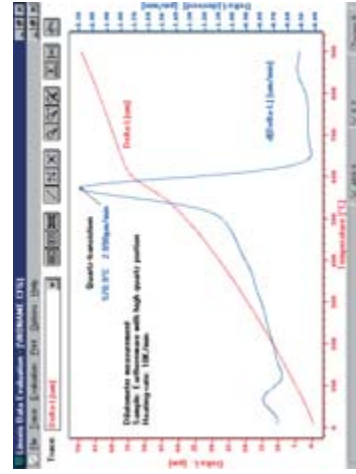
Laser Dilatometer



- Michelson Principle Laser Dilatometer
- Non contact measurement
- Maximum precision 0,3 Nanometer
- temperature range -160 up to 1000°C/1600°C



LINSEIS
Platinum Series
Thermal Analysis Instruments



thermal analysis
with **out** limits

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STA

Simultaneous Thermal Analysis



- Temperature range: -160 °C to 1650 °C
- Function TG - DTA / DSC - HDSC
- Air cooled furnace design
- Interchangeable measuring heads
- inert, oxid., red., vacuum
- Gas switching capability (manual & autom.)
- High temperature DSC with Cp
- Top and side loading designs

DSC

Differential Scanning Calorimetry



- Temperature range: -160 °C to 700 °C
- HI resolution sensor 0,125 uW
- Air cooled furnace design
- inert, oxid., red.
- Gas switching capability (manual & autom.)

DIL

Dilatometry



- Temperature range: -160 °C to 2800 °C
- Single, dual, and 4 sample designs
- Absolute and differential operation
- Air cooled furnace design
- Interchangeable measuring heads
- inert, oxid., red., vacuum
- Gas switching capability (manual & autom.)
- Horizontal and vertical designs

TMA

Thermo Mechanical Analysis



- Temperature range: -160 °C to 1600 °C
- 4 different sample holders
- 2 modes, static and dynamic
- Air cooled furnace design
- inert, oxid., red., vacuum
- Gas switching capability (manual & autom.)

FTIR / MS coupling

Gas Analysis Coupling FTIR / MS Interface



Linseis cooperates with JASCO FTIR spectrometers, as well as with Pfeiffer (Balzers) mass spectrometers.

HDSC / DTA

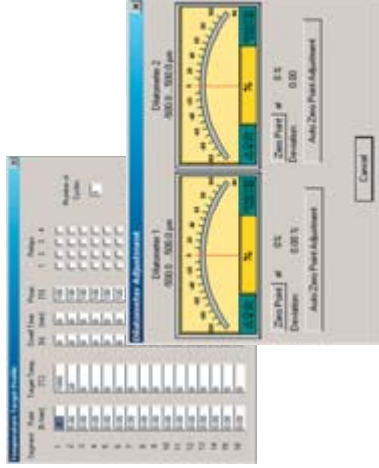
Diff. Scan. Calorimetry / Therm. Analysis



- High temperature DSC & DTA module
- Temperature range: -160 °C to 1650 °C
- Air cooled furnace design
- Interchangeable DSC & DTA heads
- inert, oxid., red., vacuum
- Gas switching capability (manual & autom.)
- High temperature DSC with Cp

TAWIN

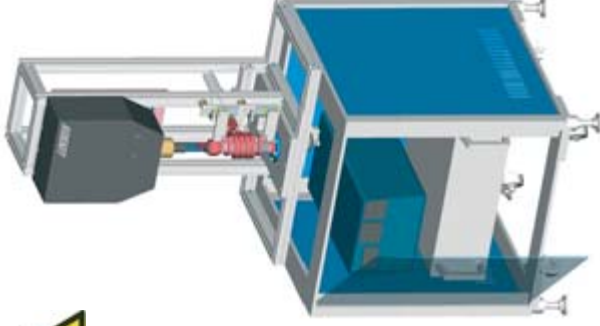
Platinum Software, Thermische Analyse



- Multitasking, Modul Design
- Frei Konfigurier- und Kombinierbar
- 32 Bit Microsoft Windows™ Software
- USB Interface oder PCI Interface
- ASCII Daten Export
- Automatisch ablaufende Operationen

LASER

Laser Dilatometer

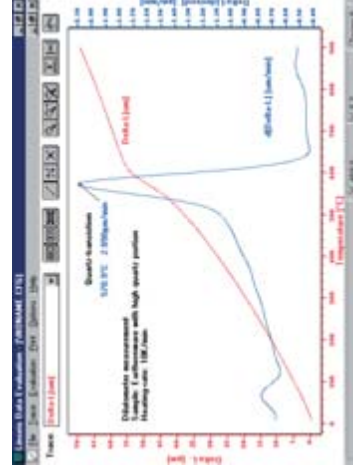


- Michelson Prinzip Laser Dilatometer
- Kontaktfreie Messung
- Maximale Präzision 0,3 Nanometer
- Temperatur Bereich -160 bis 1000°C/1600°C



LINSEIS

Platinum Series
Thermal Analysis Instruments



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thermal analysis
with **out** limits

STA

Simultane Thermische Analyse



- Temperatur Bereich: -160 °C bis 1650 °C
- Funktion TG - DTA / DSC - HDSC
- Luftgekühlte/Wechselbare Ofen
- Wechselbare Messköpfe
- Inert, Oxid., Red., Vakuum
- Gas Kontrolle, Manuell und Automatisch
- Hoch Temperatur DSC mit Cp

DSC

Differentielle Scanning Calorimetrie



- Temperatur Bereich: -160 °C bis 700 °C
- Hoch Auflösender Sensor 0,125 uW
- Luftgekühlter Ofen
- Inert, Oxid., Red.
- Gas Kontrolle, Manuell und Automatisch

DIL

Dilatometrie



- Temperatur Bereich: -160 °C bis 2800 °C
- Single, Dual, und 4 Fach Ausführung
- Absolute und Differentielle Messungen
- Luftgekühlte/Wechselbare Ofen
- Wechselbare Meßsysteme
- Inert, Oxid., Red., Vakuum
- Gas Kontrolle, Manuell und Automatisch
- Horizontale und Vertikale Ausführung

TMA

Thermo Mechanische Analyse



- Temperatur Bereich: -160 °C bis 1600 °C
- 4 verschiedene Meßsysteme
- 2 Modus, Statisch und Dynamisch
- Luftgekühlter Ofen
- Wechselbare Meßsysteme
- Inert, Oxid., Red., Vakuum
- Gas Kontrolle, Manuell und Automatisch

FTIR / MS coupling

Gas Analyse Kopplung FTIR / MS Interface



Linseis Kopplung mit JASCO FTIR Spektrometer, sowie Kopplung mit Pfeiffer (Balzers) Massen Spektrometer.

HDSC / DTA

Diff. Scan. Calorimetrie / Therm. Analyse



- Hoch Temperatur DSC & DTA
- Temperatur Bereich: -160 °C bis 1650 °C
- Luftgekühlte/Wechselbare Ofen
- Wechselbare DSC & DTA Meßköpfe
- Inert, Oxid., Red., Vakuum
- Gas Kontrolle, Manuell und Automatisch
- Hoch Temperatur DSC mit Cp