

## DSC OIT Setline



We help you perform even better

## Thermal Analysis and Quality Control

Manufacturers need to meet the increasing demand for products that are not only Simple, they are Powerful too. Product quality and performance.

Product materials and manufacturing processes can both be monitored using thermal analysis to ensure optimal product quality and productivity. Its application within quality control is therefore both broad and numerous and includes polymer, pharmaceutical, cement, steel, battery, textile, carbon and catalyst manufacture to name a few.

With diverse industries and their commercial needs in mind, Setline's thermal analysis instruments are designed for simplicity and power.

## Applications

The combination of simplicity and power of SETLINE DSC and DSC+ make them the ideal instruments for intensive use in material quality and control testing. Most QC laboratories manage multiple material characterization methods

incompatible with complex, user intensive technology and instrument downtime. The robustness and high testing throughput of the DSC+ auto-sampler combined with Calisto's fast and simple data treatment powered by user recorded macros are ideal for QC labs.

For the most common DSC measurements in industry including:

- Temperatures and enthalpies of melting and crystallization
- Glass transition temperatures of polymers
- Heat of curing / degree of curing of polymers
- Oxygen Induction Time of polymers
- Purity of chemicals using the Van't Hoff method
- Materials decomposition and thermal stability



## SENSOR

The Setline transducer is made from chromel-constantan and uses plate-shaped DSC rod technology ensuring high sensitivity over the full temperature range

(-170 °C to 700 °C). It is housed in a small volume, resistor furnace with low thermal inertia. This enables high heating and cooling rates for the multiple, high speed experiment for quality control.

Furnace temperature is extremely uniform, ensuring high quality data and accurate.

## EASY TO USE DSC

Setline DSC is easy to use and easy

- ✓ easy to use across diverse QC fields.
- ✓ robust DSC sensor technology ensures quality
- ✓ consistent and reliable data.
- ✓ compact design space efficient for all laboratories.
- ✓ DSC+ automates repetitive testing saving significant time.
- ✓ high uptime due to 66 position auto-sampler, fast heat up and cool down.



## DSC Calisto software

Calisto is designed to treat any Thermal Analysis data from the DSC instrument and consists of two independent parts:

CALISTO ACQUISITION is dedicated to the control and data acquisition of SETLINE® DSC. It includes the intuitive set-up of experiment procedures that can be saved and reapplied to multiple samples later.

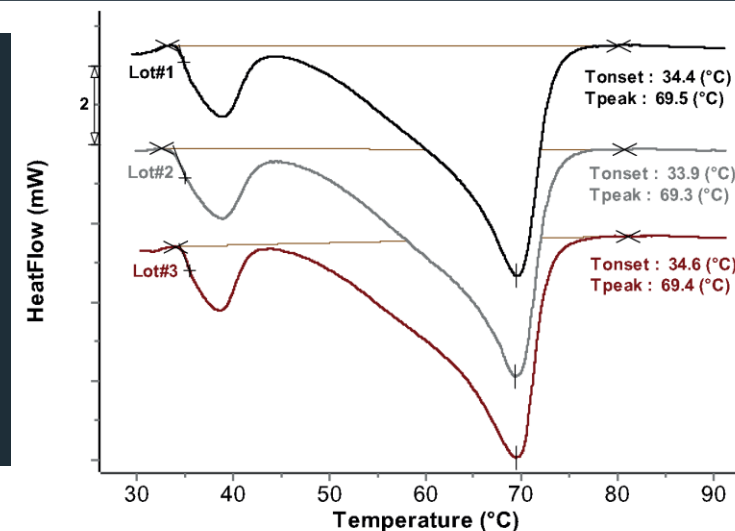
CALISTO PROCESSING is designed for SETLINE DSC data treatment and includes:

- Powerful peak processing (integration, baseline choice, temperature, deconvolution/peak separation etc).
- Data integrity features with user rights management options, data modification traceability, secured access etc
- Automated data processing adapted to your needs with user recorded macros
- Options to present data with the maximum impact
- Direct export to graphical or spreadsheet formats
- See [calisto-software.com](http://calisto-software.com) for more information on the power of Calisto 2.0 software.

## Calisto software example

Melting profiles of 3 different lots of the same cosmetic ingredient (lipstick).

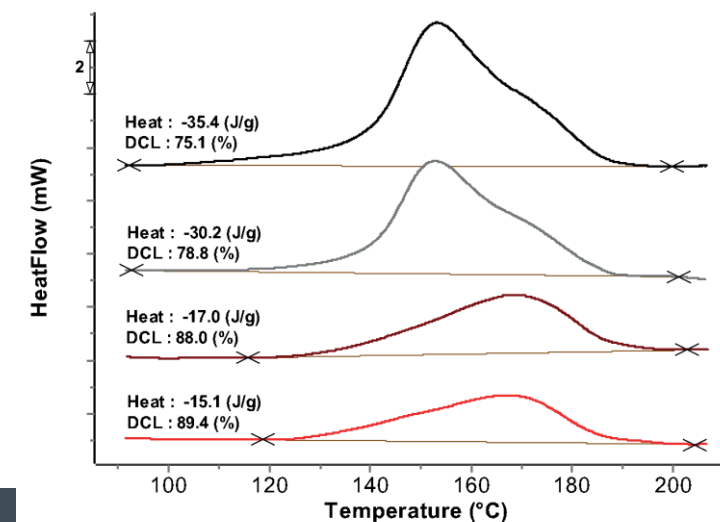
Determination of the start (onset) and end (peak) temperatures of melting.



## Calisto software example

Determination of the degree of crosslinking (DCL) of ethylene-vinyl acetate (EVA) copolymers films after lamination. EVA films are meant to be used as encapsulants for photovoltaic applications. The heat of the residual curing reaction is measured and divided by the heat of reaction of an uncured sample to calculate DCL.

The several lots tested show various DCL.



## CRUCIBLES

We provide Regular and High Pressure crucibles. Regular crucibles - Alumina, Aluminium (30 and 100  $\mu$ l) ensure good thermal transfer between sample and sensor.

High pressure crucibles – Incoloy (30  $\mu$ l) deliver unmatched high pressure capability (up to 500 bar / 7 250 psi, 600 °C) whilst the DSC sensor remains at atmospheric pressure.



	Setline DSC	DSC Setline+
Temperature range (°C)	-170 to 700	-170* to 700
Programmable heating rate (°C/min)	0.01 to 100	0.01 to 100
Cooling time	12 min from 500 °C to 100 °C (air) 12 min from 25 °C to -100 °C (LN2) 5 min from 100 °C to 0 °C (cryothermostat)	12 min from 500 °C to 100 °C (air) 12 min from 25 °C to -100 °C (LN2) 5 min from 100 °C to 0 °C (cryothermostat)
Enthalpy accuracy / precision (%)	+/- 0.8 / 2.5	+/- 0.8 / 2.5
Temperature accuracy / precision (°C):	+/- 0.07 / 0.15	+/- 0.07 / 0.15
DSC measurement range (mW):	+/- 600 (small range) ; +/- 6 000 (large range)	+/- 600 (small range) ; +/- 6 000 (large range)
Atmosphere:	Inert gas, air (possible gas switch between 2 gases)	Inert gas, air (possible gas switch between 2 gases)
Gas flow range (ml/min):	10 – 100	10-100
Autosampler:	---	66 positions (samples or references)
Height - Width - Depth (mm) / (in):	317 - 376 - 430 / 12.5 - 14.8 - 16.9	362 to 815 (open cover) - 455 - 508 / 14.3 to 32.1 (open cover) - 17.9 - 20
Power supply:	230V - 50/60Hz	230V - 50/60Hz



## Installation & training

SCITEQ's trained service technicians perform onsite installation of your new SCITEQ equipment as well as onsite or remote training of your operating personnel who will be using the equipment.



## Service agreements

With a SCITEQ service agreement you can rest assured your equipment will perform 100% all the time. Specialized service engineers will visit you annually to perform the best service and calibration. You can always liaise with your SCITEQ service technician when in need of advice, looking for new solutions or trying out new equipment.



## Support online & on-site

SCITEQ offers online and on-site support on all SCITEQ products, for fast and effective problem solving, training, setup, etc. If you have an unforeseen challenge or you need advise asap, you can contact [service@sciteq.com](mailto:service@sciteq.com) or call us for urgent support.