

microSC

Microcalorimetry
From -40°C to 200°C

by Setaram



A trademark of KEP Technologies group

microSC

APPLICATIONS

With its temperature range (-40 to 200 °C) the microSC can meet a wide range of application, especially when dealing with :

Pharmaceuticals

- Crystallization of amorphous phase of excipients,
- Purity, polymorphism of API (the sensitivity improves the lower percentage of detectable amorphous phase)

Energetic Materials

- Thermal activity of propellants

Food and biosystems

- Degree of gelatinization of cereals, starch, polysaccharides
- Thermal denaturation of proteins
- Oxygen induction times of lipids
- Maillard reaction on polysaccharides, proteins interactions
- Phase transition

Setaram introduces the NEW microSC microcalorimeter featuring the « 3D Calvet Sensor » with unmatched sensitivity in both isothermal and scanning modes plus multiple sample capacity with zero cross talk sensors.

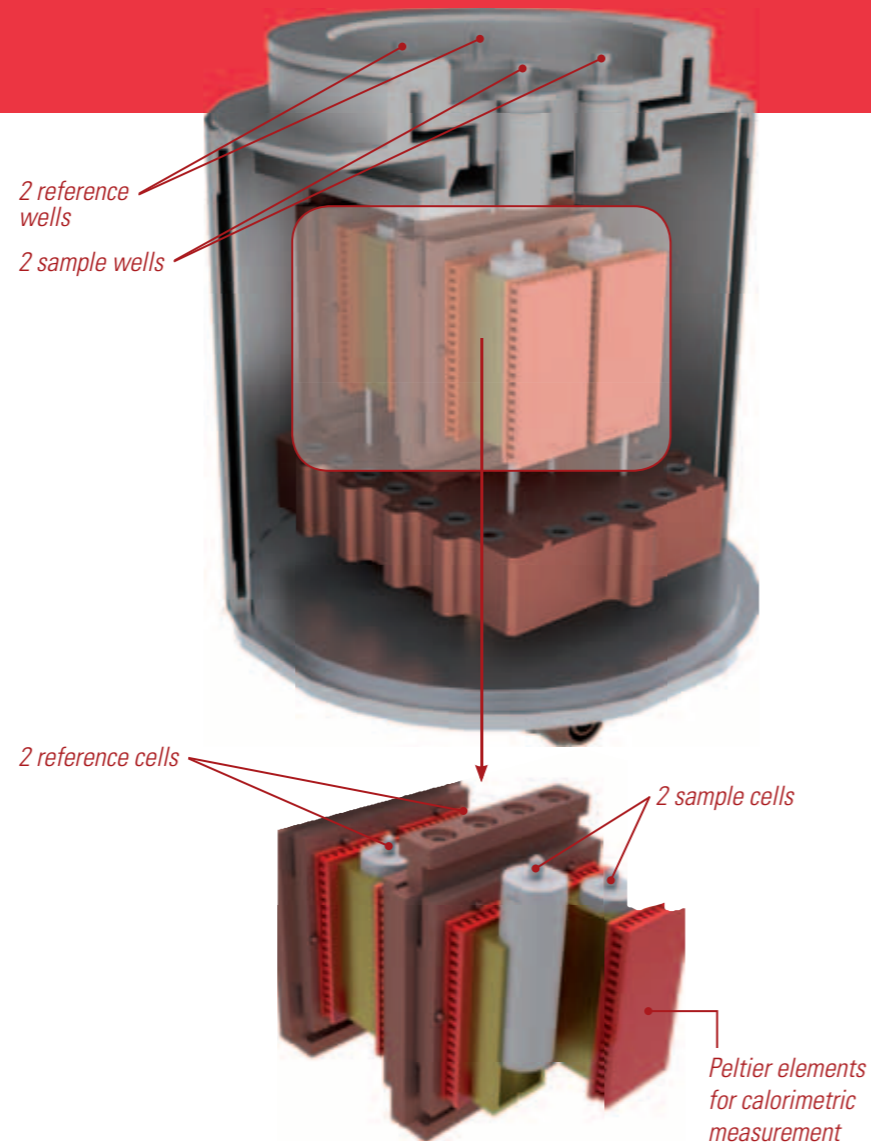
HIGHLIGHTS include:

- Wide temperature range covering -40 to 200 °C
- Two measuring wells, featuring zero cross talk, and easily removable and reusable cells
- High precision isothermal and temperature scanning options are available to enable the study of both transitions and long term isothermal behaviour (long term stability and reactions).



SENSOR

- The microSC features the very latest evolution of the proven high performance '3D Calvet Sensor' with direct (Joule effect) calibration and featuring easily removable and reusable cells.
- Each sample cell features its own reference to ensure there is no possibility of cross talk.
- The temperature (and therefore thermal event) is precisely controlled, within the range of -40 to 200 °C, using state of the art two stages Peltier element thermostat that surround the sample on all sides.
- Therefore the microSC covers all the interesting events for proteins, long term stability and food interactions.
- The sensor delivers unmatched performance for isothermal tests, as well as scanning.
- The ability of Calvet to detect all of the heat effects allows you to use removable vessels that can be designed for different applications including mixing, Cp and pressure applications.



See microSC application notes

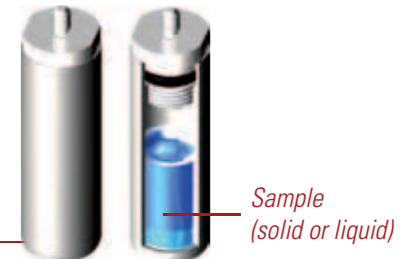
VESSELS

The microSC offers different tightly closed and removable cells.

All the cells can be used in either isothermal or DSC mode. They are made of Hastelloy C, have a volume of approximately one cm³ and are readily removed and easily cleaned.

Closed "batch" cells

For the analysis of raw solid or liquid samples. These vessels are sealed, and can withstand internal pressures of up to 20 bar.



"Batch" mixing cells

For studying reactions between a solid and a liquid, or between two liquids. Each batch mixing vessel includes two sample compartments separated by a Teflon membrane which is pierced mixing the two chambers and then mechanically agitated.


This vessel is the best fit for the determination of heat and kinetics of:

- Dissolution of salts, organic substances, pharmaceuticals materials under different forms
- Enzymatic, fermentation, hydration reactions
- Interactions between dissolved molecules
- Adsorption of a solvate on a solid medium
- Change of conformation of polymers in solution



SPECIFICATIONS

Temperature range	-40 °C to 200 °C Cooling under -20 °C requires the use of an auxiliary thermostat
Programmable temperature scanning rate (heating and cooling)	From 0.001 to 1.2 °C .min ⁻¹
RMS noise	0.2 µW typical
Measurement Cells	2 X 1 ml - Made of Hastelloy C - removable No signal cross talk between cells (up to 10 mW) Batch, mixing batch
Weight	37.4 kg (82.5 lbs)
Dimensions	40 / 53 / 58 cm (15.7 / 20.9 / 22.8 in)
Power requirements	230v - 50/60 Hz

Option : AKTS Thermokinetics software for comprehensive investigation of reaction or decomposition 

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