

*Reaction Micro Calorimeter (RMC)*

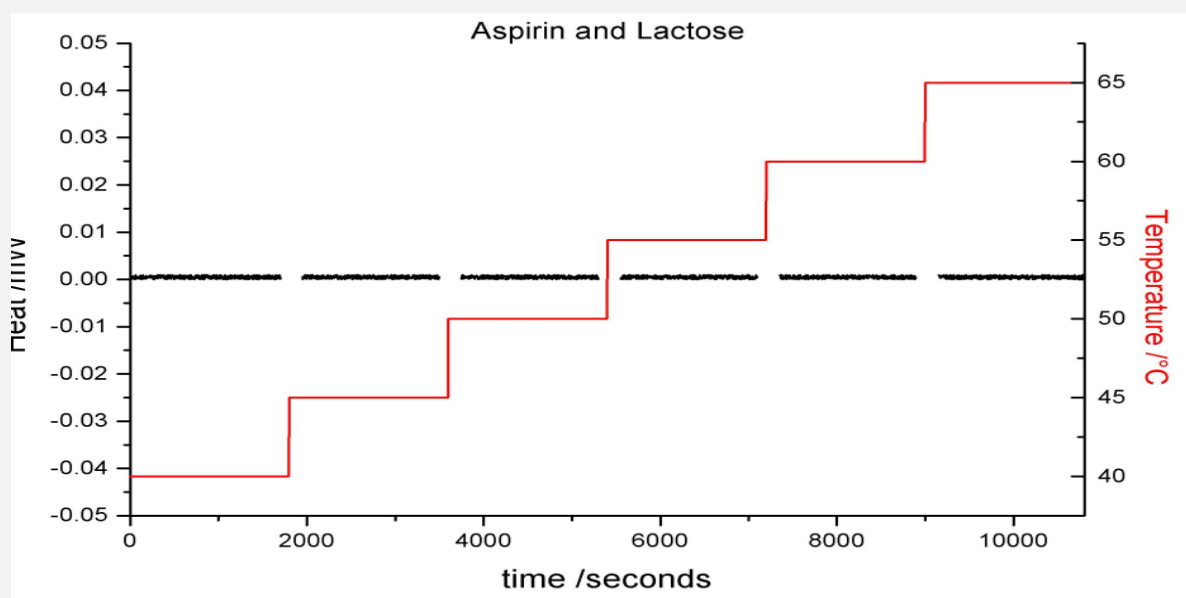


RMC is the industry standard small scale reaction calorimeter for early process characterization, Optimization, reaction kinetics, and safety screening. This small scale reaction micro calorimeter is used to accurately map out chemical pathways prior to scale-up because it generates scalable heat flow that matches real chemical conversion.

### Reaction Calorimeter Specifications:

- Temperature range from -10C to +180C
- Detect heat generation in microwatt (1.5 microwatt sensitivity)
- 3 to 3.5ml borosilicate glass septa sealed reactors (10 ml also available on request)
- Hastelloy C pressure reactors up to 1200 psig
- 800 rpm internal magnetic stirring, 1000 rpm mechanical stirring
- Visual observation through a borescope.
- Automated syringe pump dosing for liquid and Manual for Solid available - Ability to add up to 100- 250 $\mu$ L of the solvent in steps of upto 1-1.5  $\mu$ L automatically to the sample chamber.

RMC work on Power compensation and Peltier cooling/heating method



Operation Modes: Isothermal, Step Isothermal and dynamic scan

Isothermal Stability +/- 0.0001°C

Scanning Rate: 0.1 to 2°C

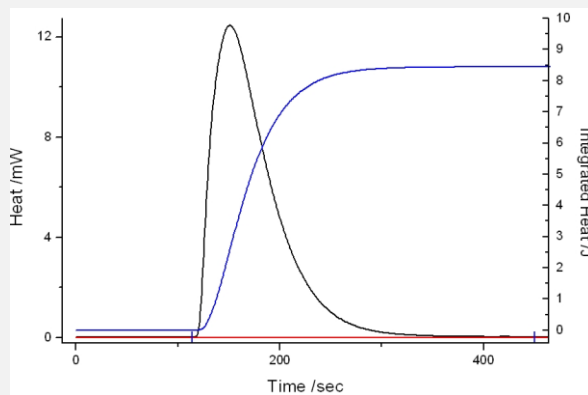
## Key Features:

- Characterize reactions with grams/ml of materials while producing data that scales for production processes.
- Early for hazardous events and non-scalable factors.
- Obtain total heats, reaction kinetics and thermodynamics, heat capacity and thermo chemical conversion etc.
- Designed to perform wide ranging reactions from pressure to semi-batch reactions with overhead and internal stirring.

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).



x 35 cm (width x depth x height)



Footprint 15 x 40

**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



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