

Process Development

The μ RC is easy to use which allows any chemist or engineer the ability to rapidly investigate whatever reaction parameters they desire.

Calorimetry tests can provide users with information on reactant conversion, material accumulation, competitive reactions, inhibition and catalysis.

Automated addition of materials allows unattended, walk-away operation and the options of disposable vials and syringes keeps costs to the minimum when conducting many reactions.

Additional options such as a pressure handling option and high pressure cells will allow users to monitor pressure and gas formation either as a function of reaction conversion or, in the case of scanning experiments, as a function of temperature. The system can also function with disposable syringes for use with highly aggressive materials.

Catalyst Screening

Although many reactions run better when catalysed it is very difficult to know the best catalyst to use. A recent survey of catalyst manufacturers suggested that in excess of 1000 versions of alumina supported platinum exist. This raises questions. Which is the best system? What are the best conditions?

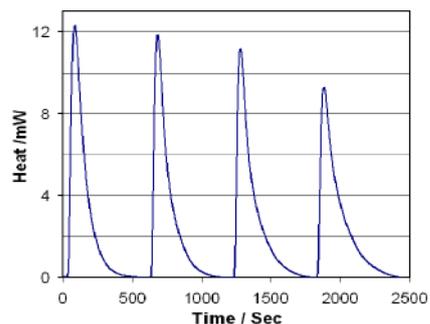
The ability to measure both kinetics and thermodynamics simultaneously allows users to select the parameters which are important to their process and monitor those as the catalyst is changed.

High pressure vessels allow gas phase reactions (e.g. hydrogenation) to be examined. The μ RC can be supplied with a high pressure transducer for direct measurement of gas uptake during reaction or gas evolution measurement.

Dissolution Experiments

The enthalpy of solution is an important parameter in both chemistry and pharmaceuticals. Using the Solid Addition System, heats of solution can be measured reliably and repeatedly without error. The solid is loaded into the addition system and the base of the system sealed using a Teflon disk. The plunger is then lowered at the appropriate time in order to introduce a well-equilibrated material into the solution.

Kinetic controlled reaction



High pressure vials



Disposable syringe option



KCl Enthalpy of solution

