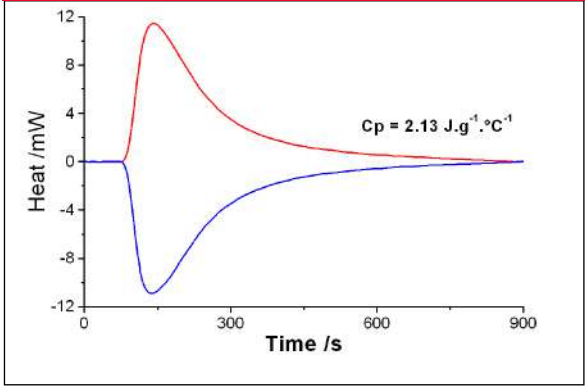
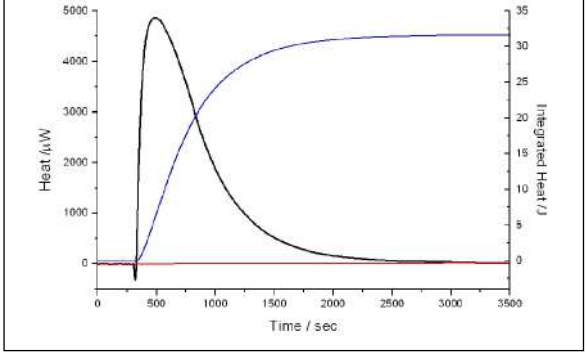
Heat Capacity

The µRC can be used to rapidly and accurately measure the heat capacity of solids, liquids and mixtures. Applying small temperature steps to the material in question allows the heat required to be measured. Heat capacity can be determined at multiple temperatures within the same experiment. Using these data can significantly improve the data measured using larger reaction calorimeters.

Heat capacity of acetone



Hydrolysis reaction



Process Hazard Analysis

The Micro Reaction Calorimeter provides hazard analysis with both speed and flexibility. Working with less than 2ml total volume reduces costs, waste and time. The µRC is capable of reducing the time requirement of a reaction calorimetry study on a process from several days to a few hours.

Power compensation calorimetry measures in units of power meaning that calculation of reaction enthalpy is simply performed by dividing heat-flow integral (automatically produced) by quantity. Using the different modes of injection (single, multiple or timed) allows batch and semi-batch processes to be simulated under safe controlled conditions.

Process deviation studies have never been easier. Instead of generating several litres of waste over several hours for each variant considered, the micro calorimeter can generate the same information in a few minutes. This will allow proper consideration of all possible maloperations where before, time, cost and material availability may have limited the application.

The more considerations of credible misoperation that are performed the safer a plant and process are. THT aim to re-empower the safety professional by providing new technologies which can considerably improve the way hazard studies are performed.