

## PolyCAT

A parallel 4 or 8 reactor system designed for the rapid screening of high pressure reactions and catalysts

### Features

- | Individual stirred reactors at separate start pressures
- | Individual temperature control for each vessel (temperatures 25 °C - 250 °C)
- | A range/difference of over 100 °C between the reactors
- | Excellent stirring - individually controlled & measured
- | Compact manifold for easy purge & pressurisation
- | Hastelloy reactor version for aggressive chemistries



8 Reactor PolyCAT

### Operating Modes

#### Experiments can be designed to:

- | Run all reactions at same temperature and pressure -while varying the catalyst or reagents
- | Keep catalyst loads identical but vary the initial pressure
- | Run individual reactors with different loads, pressure and temperatures

Analysis of the final product provides information on the effects of the variables

The **PolyCAT** offers simple screening  
of hydrogenation and  
other reactions up to 200 bar



4 Reactor PolyCAT

# System Overview

## Agitation

- | Excellent mixing – enabling heterogeneous and homogenous catalytic gas-liquid reactions.
- | Proprietary “suspended” mechanical impellers provides mixing comparable to that with overhead stirrer motors.
- | The mixing rate is such that gas uptake is often kinetic controlled, allowing scale up with confidence.



## Working volume

- | Standard 8 x 16 ml, minimum working volume ~ 3 ml.
- | Other options include 75 ml and 120 ml.
- | 316SS and other alloys (e.g. Hastelloy) are available.

## Temperature

- | A separate mantle around each reactor allows the temperature to be controlled individually up to 250 °C.
- | The internal temperature of each reactor is measured and controlled.
- | Temperature difference of over +100 °C between reactors can be achieved.

## Pressure Limit & Monitoring

- | Each reactor can be manually (and individually) pressurised up to 200 bar.
- | Reactors can be charged to different start pressures and then the stirring to initiate the reaction.
  - Gas consumption will lead to fall in pressure, indicated by dial gauge, digital transducers can be supplied to graphically measure and display individual pressures.
- | Reactors can be supplied with individual burettes to minimise pressure changes during a reaction.

## Control system

- | Software control and data logging of temperature and stirring.
- | Manual purge and gas feed of each reactor.
- | Pressure gauges supplied as standard (transducers optional).

## Aggressive Chemistries

- | The system is available with all wetted parts in Hastelloy to enable the study of even the most aggressive of chemistries.

