



# Unistat® petite fleur®

Cooling a 0.5-litre reactor to  $T_{min}$

### Requirement

This case study determines the minimum process temperature that can be achieved in a 0.5 litre Schlee glass jacketed reactor.

### Method

The Petite Fleur was connected to the reactor using 2x1-metre M16 insulated flexible metal hoses. The HTF used was ethanol and the reactor was uninsulated.

### Results

The graphic shows that the process can be cooled to a minimum of -35.7 °C with a corresponding jacket temperature of -36 °C. The rapid initial ramp rate of 3 K/min. slows as the cooling power asymptotes. The heat up time is extremely rapid in excess of 10 K/min.

### Setup details

Petite Fleur® & Schlee GmbH

- Temperature range: -40...200 °C
- Cooling power: 0.48 kW @ 200...0 °C  
0.27 kW @ -20 °C
- Heating power: 1.5 kW
- Hoses: 2x1 m; M16x1 (#9608)
- HTF: Ethanol
- Reactor: 0.5-litre un-insulated glass reactor
- Reactor content: 375 ml M90.055.03 (#6259)
- Stirrer speed: 160 rpm
- Control: process

