

# Ministat® 240-cc®-NR

Controlling a vacuum un-insulated Syrris 2-litre glass jacketed reactor to  $T_{min}$

### Requirement

The Ministat range comprises of three models of which the Ministat 240-cc-NR is the largest. This case study demonstrates the lowest achievable temperature, speed of cooling and heating and level of control when connected with a Syrris "Atlas" system configured with a 2-litre reactor.

### Method

The reactor was filled to 1.6 litre with M90.055.03, the HTF used was Ethanol, the stirrer set to 700rpm and the control to "process". The results were recorded using the "Spyware" software.

### Results

It can be seen from the graphic that the Ministat 240-cc-NR cools the jacket to a minimum of -26 °C with a corresponding process temperature of approximately -25 °C.

The heat up curve shows the precise control made possible by the Ministat 240-cc-NR as the process temperature reached exactly 20 °C from -25 °C in approximately 25 minutes.

### Setup details

Ministat® 240-cc®-NR & Syrris vacuum-insulated 2-litre glass jacketed reactor.

Temperature range: -45...200 °C  
Cooling power: 0.55 kW @ 0 °C  
0.35 kW @ -20 °C  
0.20 kW @ -30 °C

Heating power: 2 kW  
Pump speed: 4500 rpm  
Hoses: 2x1 m; M16x1 (#9608)  
HTF: Ethanol  
Reactor: 2-litre jacketed glass reactor

Reactor contents: 1.4 litre M90.055.03 (#6259)

Reactor stirrer speed: 700 rpm  
Control: process

