



Setup details

Ministat® 230-cc®-NR & Syrris vacuum insulated 2-litre glass jacketed reactor.

- Temperature range: -40...200 °C
- Cooling power: 0.38 kW @ 0 °C
0.25 kW @ -20 °C
0.14 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

Ministat® 230-cc®-NR

Ministat® 230-cc®-NR controlling a vacuum insulated Syrris 2-litre glass jacketed reactor between 20 °C and -20 °C.

Requirement

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 700 rpm and the control to "process". The results were recorded using the "Spyware" software.

Results

It can be seen from the graphic that the Ministat 230-cc-NR cools the process to -20 °C within approximately 1 hour and 20 minutes. The graphic shows the precise control and stability.

The heat up curve shows the precise control made possible by the Ministat 230-cc-NR as the process temperature reached exactly 20 °C from -20 °C in approximately 15 minutes.

