Ministat® 240-cc®-NR

Ministat® 240-cc®-NR controlling an uninsulated Buchi Glas Uster glass jacketed 250 ml autoclave between 20 °C and -20 °C

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 Buchi Glas Uster 250 ml autoclave.

Method
The reactor was filled with M90.055.03, the HTF used was Ethanol, the stirrer set to 1500 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 240-cc-NR cools the jacket to -21 °C from 20 °C in approximately 45 minutes. The control is exact as the process reaches its target of 20 °C.

Similarly, 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 -20 °C in approximately 30 minutes.

Setup details
Ministat® 240-cc®-NR & Buchi Glas Uster 250 ml autoclave.

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:	Buchi Glas Uster 250 ml autoclave.
Reactor contents:	M90.055.03 (#6259)
Reactor stirrer speed:	1500 rpm
Control:	process