



Setup details

Unistat® 830 & Buchi Glas Uster reactor

- Temperature range: -85...200 °C
- Cooling power: 3.6 kW @ 0 °C
2.2 kW @ -60 °C
3.6 @ 0 °C
3.5 @ -20...-40 °C
2.2 @ -60 °C
0.7 @ -80 °C
- Heating power: 3 kW
- Hoses: 2x1.5 m; M30x1.5 (#6386)
- HTF: DW-Therm (#6479)
- Reactor: 20-litre un-insulated jacketed metal pressure reactor
- Reactor contents: 15 litre M90.055.03 (#6259)
- Reactor stirrer speed: 400 rpm
- Control: process

Unistat® 830

Cooling a Buchi Glas Uster 20-litre metal pressure reactor to -60 °C

Requirement

This case study is to look at the performance of a Unistat 830 as it cools a Buchi Glas Uster 20-litre jacketed metal reactor to -60 °C from 20 °C (80 K).

Method

The Unistat and reactor are connected using two 1.5-metre insulated metal hoses. The reactor is filled with 15 litre of "M90.055.03", a Huber supplied silicon based HTF.

Results

The jacket cools with an initial ramp rate of 4 K/min. and the process follows at a ramp rate of 2 K/min.

The process cools smoothly through 80 K to its set-point of -60 °C in under 90 minutes.

