



Setup details
Unistat® 830 & DDPS reactor

Temperature range: -85...200 °C
 Cooling power: 3.6 kW @ 0 °C
 2.2 kW @ -60 °C
 Heating power: 3 kW
 Hoses: 2x1.5 m; M38x1.5 (#6656)
 HTF: DW-Therm (#6479)
 Reactor: 25-litre vacuum insulated glass reactor
 Reactor contents: 18.75 litre M90.055.03 (#6259)
 Reactor stirrer speed: 70 rpm
 Control: process

Unistat® 830

Heating and cooling a DDPS 25-litre reactor between 20 °C and 60 °C

Requirement
The case study shows a test result of a Unistat 830 working to respond to a temperature setpoint change in a 25-litre glass reactor.

Method
The Unistat and reactor are connected using two 1.5-metre insulated metal hoses. The reactor is filled with 18.75 litre of "M90.055.03", a Huber supplied silicon based HTF.

Results
The Unistat needs approximately 24 minutes to heat the reactor up to 60 °C. The heating rate ramps at approximately at 1.4 K/min. at the process temperature curve. On the other hand, the cooling process back to 20 °C takes 24 minutes. This cooling of the process temperature is at a rate of 1.6 K/min.

