

Unistat® 830

Cooling a DDPS 25-litre glass reactor to -60 °C

Requirement

The test is conducted to investigate the cooling performance of a Unistat 830 cooling the process temperature to -60 °C in a DDPS 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

With a cooling power of 2.2 kW at -60 °C the Unistat provides a cooling rate of approx. 0.88 K/min. to the process. In 90 minutes the process temperature reaches the required setpoint.

Setup details

Unistat® 830 & DDPS 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; M38x1.5 (#6656)
 HTF: DW-Therm (#6479)
 Reactor: 25-litre vacuum insulated jacketed glass reactor

Reactor contents: 18.75 litre M90.055.03 (#6259)

Reactor stirrer speed: 70 rpm
 Control: process

