

Unistat® 705w

Cooling a Buchi Glas Uster 3-litre reactor to -60 °C

Requirement

The graphic illustrates the performance of a Unistat 705w cooling a 3-litre un-insulated metal pressure reactor from 20 °C to -60 °C.

Method

The Unistat and reactor are connected using two 1-metre insulated metal hoses. The reactor is filled with 2.25 litre of "M90.055.03", a Huber supplied silicon based HTF.

Results

The "internal" (jacket) temperature cools at an average ramp rate of 1.8 K/min. The process temperature ramps down at > 1.8 K/min. This process cools through 80 K (20 °C to -60 °C) in 74 minutes.

Setup details

Unistat® 705w & Buchi Glas Uster reactor

Temperature range: -75...250 °C
 Cooling power: 0.6 kW @ 250...100 °C
 0.65 kW @ 0 °C
 0.6 kW @ -20...-40 °C
 0.3 kW @ -60 °C

Heating power: 1.5 kW/3 kW
 Hoses: 2x1 m; M24x1.5 (#9325)
 HTF: DW-Therm (#6479)
 Reactor: 3-litre un-insulated metal pressure reactor

Reactor content: 2.25 litre M90.055.03 (#6259)

Stirrer speed: 200 rpm
 Control: process

