

Unistat® 705w

Cooling a Buchi Glas Uster 3-litre metal reactor to T_{min}

Requirement

This study looks at the minimum achievable temperature of a Unistat 705w connected to a Buchi Glas Uster 3-litre un-insulated metal pressure reactor under "internal" control.

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

After 2 hours the cooling power asymptotes at an internal temperature of $-65\text{ }^{\circ}\text{C}$ with a corresponding process temperature of $-63\text{ }^{\circ}\text{C}$.

Setup details

Unistat® 705w & Buchi Glas Uster reactor

- Temperature range: $-75\text{...}250\text{ }^{\circ}\text{C}$
- Cooling Power: $0.6\text{ kW @ }250\text{...}-40\text{ }^{\circ}\text{C}$
 $0.3\text{ kW @ }-60\text{ }^{\circ}\text{C}$
- Heating Power: $1.5\text{ kW / }3\text{ kW}$
- Pump speed: 3500 rpm
- Hoses: $2 \times 1\text{ m; M24} \times 1.5\text{ (#9325)}$
- HTF: DW-Therm (#6479)
- Reactor: $3\text{-litre un-insulated metal pressure reactor}$
- Reactor contents: $2.25\text{ litre M90.055.03 (#6259)}$
- Reactor stirrer speed: 200 rpm
- Control: internal

