Unistat® 910w

Cooling a Buchi Glas Uster 20-litre reactor to T_{min}

Requirement
This case study is to find the minimum temperature that a Unistat 910w can take the jacket and the resultant process temperature of a Buchi Glas Uster 20-litre glass reactor.

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
Initially the jacket temperature ramps at a rate of 11 K/min. and begins to asymptote between -60 °C and -65 °C and finally bottoming out at -82 °C.
The minimum resultant process temperature is around -75 °C. If the test was allowed to run on this would probably have cooled another degree or so.

Setup details
Unistat® 910w & Buchi Glas Uster reactor

Temperature range:	-90...250 °C
Cooling power:	5.2 kW @ 250...-20 °C 4.7 kW @ -40 °C 3.1 kW @ -60 °C
Heating power:	6.0 kW
Hoses:	2x1.5 m; M38x1.5 (#6656)
HTF:	DW-Therm (#6479)
Reactor:	20-litre un-insulated jacketed glass reactor
Reactor content:	15 litre M90.055.03 (#6259)
Stirrer speed:	70 rpm
Control:	internal