

Unistat® 510w

Cooling a Chemglass 50-litre jacketed glass reactor from 20 °C to T_{min}

Requirement

This case study examines the minimum achievable process temperature within a Chemglass 50-litre jacketed glass reactor when connected to a Huber Unistat 510w.

Method

The Unistat and reactor were connected using two 1.5 m insulated metal hoses. The reactor was filled with 37 litre of "M90.055.03", a Huber supplied silicon based HTF.

Results

As can be seen in the graphic, the jacket achieves a temperature of approximately -50 °C and the process temperature asymptotes just above this at approximately -49 °C.

Setup details

Unistat® 510w & Chemglass 50-litre reactor

Temperature range:	-50...250 °C
Cooling power:	5.3 kW @ 250...0 °C 2.8 kW @ -20 °C 0.9 kW @ -40 °C
Heating power:	6.0 kW
Hoses:	2x1.5 m; M38x1.5 (#6659)
HTF:	DW-Therm (#6479)
Reactor:	50-litre Chemglass jacketed reactor (un-insulated)
Reactor content:	37 litre M90.055.03
Stirrer speed:	80 rpm
Control:	process

