Petite Fleur

Petite Fleur controlling a 20 liters uninsulated jacketed reactor

Requirement
This Case Study demonstrates the control capabilities over the process temperature when a Petite Fleur is connected with a Chemglass 20 liters uninsulated jacketed reactor over the temperature range of +20°C to +120°C then to +70°C and back to +20°C.

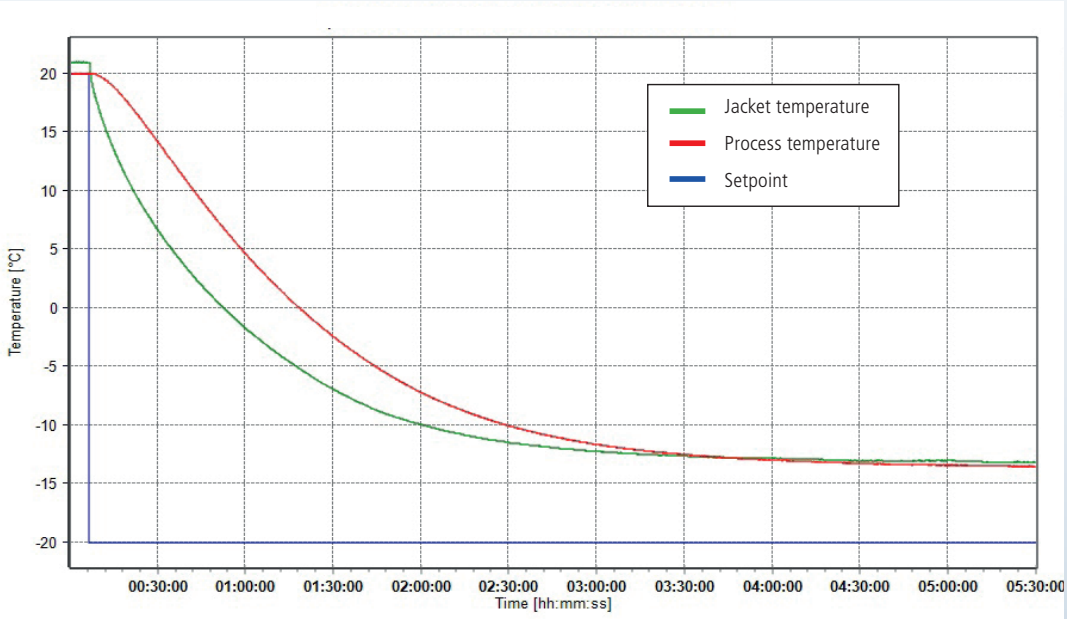
Method
The 20 liters Chemglass uninsulated jacketed reactor was connected to Petite Fleur using 1-meter metal insulated hoses. The thermofluid used in the system was "DW-Therm". Process control was carried out via a Pt100 sensor located in the process mass. Stirrer speed was set to 100 rpm.

Setup details

Temperature range:	-40°C...+200°C
Cooling power:	0.48 kW @ +20°C
	0.45 kW @ 0°C
	0.27 kW @ -20°C
Heating power:	1.5 kW
Hoses:	2*1 m metal insulated
HTF:	DW-Therm
Reactor:	Chemglass 20-liters jacketed reactor
Reactor content:	M40.165/220.10
Stirrer speed:	100 rpm
Control:	process
Amb. temperature:	22°C

Results

1. Lowest achievable temperature (Tmin):
Under the test conditions, the minimum achievable process temperature was -13.5°C as can be seen in the graphic.



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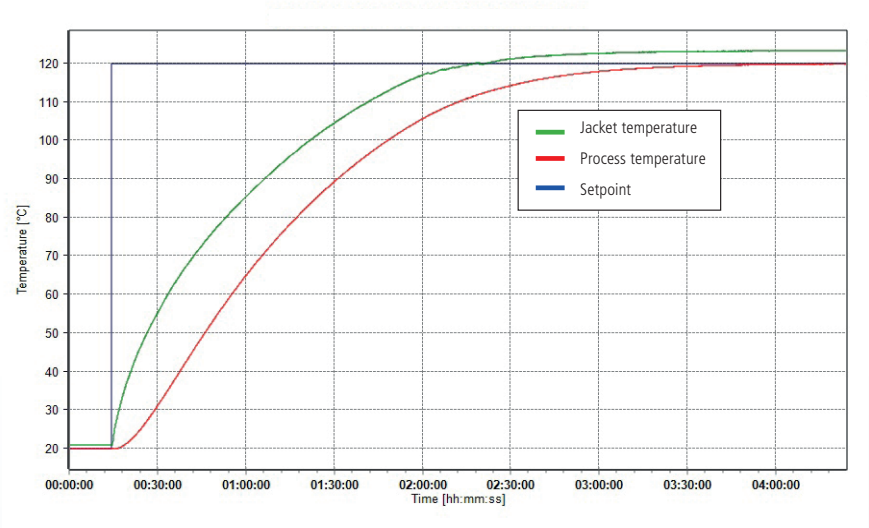
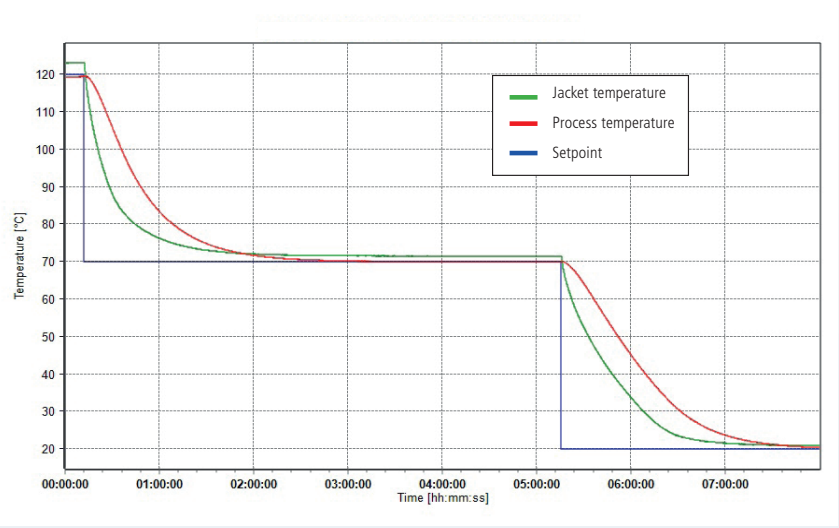
2. Performance:
The graphic shows the speed, accuracy and stability as the Petite Fleur reaches and maintains each new set point.





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