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640

### Supplementary information

Table 12: Stream results for reference design with decanoic acid as solvent using 50°C as maximum allowable temperature  $\Delta T_{min}=6^\circ\text{C}$ . See Figure 1 for schematics.

Stream	Flow kmol/s	Temperature $^\circ\text{C}$	$x_d$ %mol	$x_w$ %mol	$x_s$ %mol
1	0.5	25	0.00	98.89	1.11
2	0.5	50	0.00	98.89	1.11
3	5.16	50	69.79	30.18	0.03
4	0.25	50	$10^{-3}$	98.41	1.58
5	5.16	34	69.79	30.18	0.03
6	0.25	34	$10^{-4}$	99.37	0.62
7	4.91	34	73.33	26.66	$10^{-4}$
8	4.91	50	73.33	26.66	$10^{-4}$
9	5.16	50	66.56	33.33	0.10
10	0.25	25	$10^{-3}$	98.41	1.58
11	0.25	25	$10^{-4}$	99.37	0.63
12	$10^{-4}$	34	100	0.00	0.00
13	$10^{-4}$	50	100	0.00	0.00

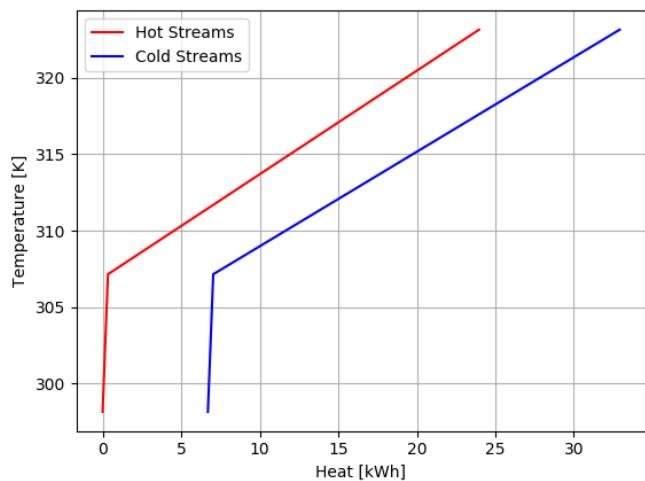


Figure 12: Composite curves for the reference design with decanoic acid as solvent using 50°C as maximum allowable temperature.