

| Material Streams   |          |                |                 |                |                 |                |                 |  |  |  |
|--------------------|----------|----------------|-----------------|----------------|-----------------|----------------|-----------------|--|--|--|
|                    |          | Stream_1_inlet | Stream_1_outlet | Stream_2_inlet | Stream_2_outlet | Stream_3_inlet | Stream_3_outlet |  |  |  |
| Vapour Fraction    |          | 0.6000         | 0.8000          | 1.0000         | 0.0000          | 1.0000         | 0.0000          |  |  |  |
| Temperature        | С        | 150.0          | 150.0           | 250.0          | 170.4           | 250.0          | 250.0           |  |  |  |
| Pressure           | kPa      | 476.0          | 476.0           | 800.0          | 800.0           | 800.0          | 3978            |  |  |  |
| Molar Flow         | kgmole/h | 5.551e-002     | 5.551e-002      | 5.551e-002     | 5.551e-002      | 5.551e-002     | 5.551e-002      |  |  |  |
| Mass Flow          | kg/h     | 1.000          | 1.000           | 1.000          | 1.000           | 1.000          | 1.000           |  |  |  |
| Liquid Volume Flow | m3/h     | 1.002e-003     | 1.002e-003      | 1.002e-003     | 1.002e-003      | 1.002e-003     | 1.002e-003      |  |  |  |
| Heat Flow          | kJ/h     | -1.403e+004    | -1.360e+004     | -1.297e+004    | -1.520e+004     | -1.297e+004    | -1.484e+004     |  |  |  |

| Energy Streams |      |              |               |               |  |  |  |  |
|----------------|------|--------------|---------------|---------------|--|--|--|--|
|                |      | Heater1_duty | Heater_2_duty | Heater_3_duty |  |  |  |  |
| Heat Flow      | kJ/h | 422.8        | -2230         | -1865         |  |  |  |  |

2.6d: 1 kg/h = 1/60 kg/s, 422.8 kJ/h = 7.046 kW;  $deltaH_{specific} = (7.046 \text{ kJ/s})/(1/60 \text{ kg/s}) = 422.8 \text{ kJ/kg}$  $deltaH = m*deltaH_{specific} = (3 \text{ kg})(422.8 \text{ kJ/kg}) = 1268 \text{ kJ}$ 

 $2.6e: 1 \text{ kg/h} = 1/60 \text{ kg/s}, -2230 \text{ kJ/h} = -37.16 \text{ kW}; \\ \text{deltaH}_{\text{specific}} = (-37.16 \text{ kJ/s})/(1/60 \text{ kg/s}) = -2230 \text{ kJ/kg} \\ \text{deltaH} = m*\text{deltaH}_{\text{specific}} = (3 \text{ kg})(-2230 \text{ kJ/kg}) = -6690 \text{ kJ}$ 

 $2.6f: 1 \text{ kg/h} = 1/60 \text{ kg/s}, -1865 \text{ kJ/h} = -31.08 \text{ kW}; \\ \text{deltaH}_{\text{specific}} = (-31.08 \text{ kJ/s})/(1/60 \text{ kg/s}) = -1865 \text{ kJ/kg} \\ \text{deltaH} = m*\text{deltaH}_{\text{specific}} = (3 \text{ kg})(-2230 \text{ kJ/kg}) = -5595 \text{ kJ}$