

Production of Methanol

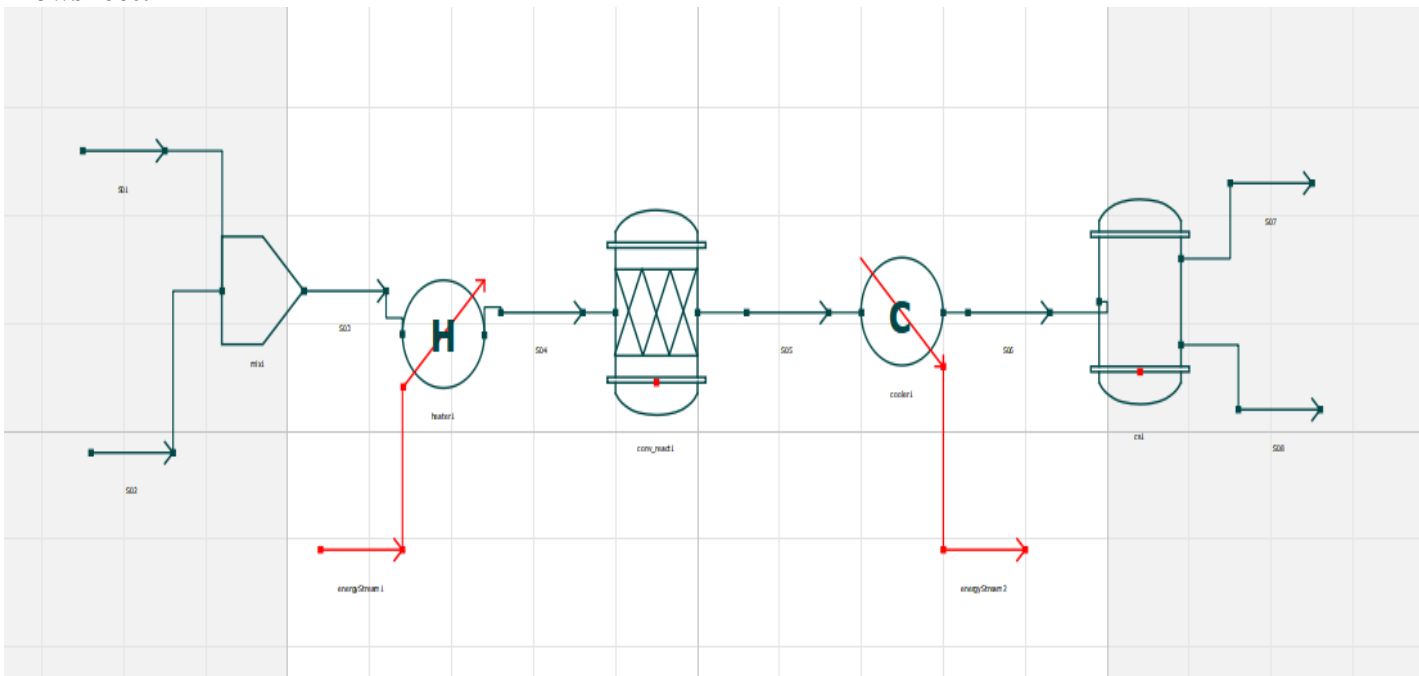
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Background & Description:

In this process, we are reacting Carbon Monoxide and Hydrogen at 523 K and 60 MPa to form methanol. We are then using a cooler to lower the temperature to about 273.15 K where all the methanol turns into liquid state and is separated using a flash column (here compound separator was used due to convergence issues). The gas phase from the flash column is recycled back to the reactor to increase the overall yield.

Flowsheet:



Results:

Carbon monoxide and hydrogen are present in stoichiometric ratio of 1:2 in all streams

	Temperature (K)	Pressure (Pa)	Mole flow (mol/s)	Mole fraction (Carbon monoxide)	Mole fraction (Methanol)
S01	298.15	6000000	5323.12	0.3333	0
S02/S07	273.15	6000000	3554.6	0.3328	0.0006
S05	523.15	6000000	5330.88	0.222	0.333
S08	273.15	6000000	1776.28	0.0003	0.9989