Simulation of Pump

The stream whose composition is given in Table is to be pumped from 25 to 100 psi. The inlet temperature is -10°C. Use the pump block to calculate the horsepower if the pump's efficiency is 80%.

Component	Abbreviation	lbmol/hr
Methane	C1	0.1
Ethane	C2	1
Propane	C3	10
n-Butane	NC4	18.9
1-Butane	IC4	20
1,3-Butadiene	DC4	20

Thermodynamic Methods: LK-PLOCK

Creating Simulation Environment

1. Select the Pump from the Model Palette under the Pressure Changers tab.
2. Connect the Material Streams on the inlet and outlet of the pump block.
3. Rename inlet to **SUCTION** and outlet to **DISCHARGE.**
4. In the Streams tab, select the Suction tab. Specify the following stream conditions:

   Temperature: -10°C'

   Pressure: 25 psi

   Go to composition tab and specify the flowrate according to the table given above.

5. In the BLOCKS tab, select the PUMP tab and specify the given specifications.
   Specifications:

   Efficiency: 0.8

   Discharge Pressure: 100 psi.

6. Run the simulation.