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from DWSIM.Thermodynamics import *

feed1 = ims1
feed2 = ims2

P_1 = feed1.GetProp("pressure", "Overall", None, "", "")
P_2 = feed2.GetProp("pressure", "Overall", None, "", "")

massflow_1 = feed1.GetProp("totalFlow", "Overall", None, "", "mass")
massflow_2 = feed2.GetProp("totalFlow", "Overall", None, "", "mass")

molfrac_1 = feed1.GetProp("fraction", "Overall", None, "", "mole")
molfrac_2 = feed2.GetProp("fraction", "Overall", None, "", "mole")

molflow_1 = feed1.GetProp("totalFlow", "Overall", None, "", "mole")
molflow_2 = feed2.GetProp("totalFlow", "Overall", None, "", "mole")

enthalpy_1 = feed1.GetProp("enthalpy", "Overall", None, "Mixture", "mass")
enthalpy_2 = feed2.GetProp("enthalpy", "Overall", None, "Mixture", "mass")

massflow_3 = [0]
molflow_3 = [0]
enthalpy_3 = [0]
P_3 = [0]

massflow_3[0] = massflow_1[0] + massflow_2[0]

molflow_3[0] = molflow_1[0] + molflow_2[0]

totalenthalpy = (massflow_1[0] * enthalpy_1[0]) + (massflow_2[0] * enthalpy_2[0])
enthalpy_3[0] = totalenthalpy/massflow_3[0]

totalmolflow_comp1 = (molfrac_1[0] * molflow_1[0]) + (molfrac_2[0] * molflow_2[0])
totalmolflow_comp2 = (molfrac_1[1] * molflow_1[0]) + (molfrac_2[1] * molflow_2[0])

molfrac_3 = [totalmolflow_comp1 / molflow_3[0], totalmolflow_comp2 / molflow_3[0]]

P_3[0] = (P_1[0] + P_2[0]) * 0.5

out = oms1

out.Clear()

out.SetProp("enthalpy", "Overall", None, "", "mass", enthalpy_3)

out.SetProp("pressure", "Overall", None, "", "", P_3)
out.SetProp("fraction", "Overall", None, "", "mole", molfrac_3)
out.SetProp("totalFlow", "Overall", None, "", "mass", massflow_3)

out.PropertyPackage.DW_CalcEquilibrium(PropertyPackages.FlashSpec.P,
PropertyPackages.FlashSpec.H)

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