



```
df = pd.read_csv('tables/hw14.csv')
fig = HW14.Generate_YX_Diagram(df)

xF, xN = .2, .01
x_F, x_N = HW14.CapXY(xF), HW14.CapXY(xN)

lines = []
lines.append(pd.DataFrame({"X": [x_F], "Y": [0]}).astype(float))
lines.append(pd.DataFrame({"X": [x_N], "Y": [0]}).astype(float))

lines.append(pd.DataFrame({"X": [x_N, x_F], "Y": [0.00, .062 / 1.5]}).astype(float))

fig = HW14.PlotLines(fig, lines).show()

Vs_min = ((.062 - 0) / (.25 - .01)) * q(100 * (1 - xF), 'kmol/h')
print(f"Vs_min: {Vs_min}")
```

Vs_min: 20.666666666666668 kmol/h

	Units	L	V
Description			
From		B1	B1
To			
Stream Class		CONVEN	CONVEN
Maximum Relative Error			
Cost Flow	\$/hr		
MIXED Substream			
Phase		Liquid Phase	Liquid Phase
Temperature	C	24.9362	21.0968
Pressure	bar	1.01325	1.01325
Molar Vapor Fraction		0	0
Molar Liquid Fraction		1	1
Molar Solid Fraction		0	0
Mass Vapor Fraction		0	0
Mass Liquid Fraction		1	1
Mass Solid Fraction		0	0
Molar Enthalpy	kcal/mol	-68.2298	-13.0106
Mass Enthalpy	kcal/kg	-3774.28	-101.913
Molar Entropy	cal/mol-K	-38.9644	-44.8325
Mass Entropy	cal/gm-K	-2.1554	-0.351177
Molar Density	mol/cc	0.055069	0.0112657
Mass Density	kg/cum	995.513	1438.22
Enthalpy Flow	Gcal/hr	-5.43038	-5.3019
Average MW		18.0776	127.664
Mole Flows	kmol/hr	79.5895	407.507
Mole Fractions			
TRICH-01		0.000549351	0.949807
ACETONE		4.66614E-10	0.0490789
WATER		0.999451	0.00111454

	Units	F	S
Mass Flows	kg/hr	2602.82	50859.9
Mass Fractions			
Volume Flow	cum/hr	2.93393	34.8966
Liquid Phase			
Liquid2 Phase			
	Units	L	V
Mass Flows	kg/hr	1438.78	52024
Mass Fractions			
Volume Flow	cum/hr	1.44527	36.1724
Liquid Phase			
Liquid2 Phase			