Simulation Report

DWSIM 9.0

Details

Title: MySimulation_33

Comments:

Object: Residue

Type: Material Stream

Property	Value	
Temperature	99.3844	C
Pressure	1	atm
Mass Flow	0.249237	kg/s
Molar Flow	49.68	kmol/h
Volumetric Flow	0.000260275	m3/s
Mixture Molar Fraction		
Methanol	0.0032349	
Water	0.996765	
Density (Mixture)	957.593	kg/m3
Molecular Weight (Mixture)	18.0607	kg/kmol
Specific Enthalpy (Mixture)	-2226.22	kJ/kg
Specific Entropy (Mixture)	-5.88546	kJ/[kg.K]
Molar Enthalpy (Mixture)	-40207	kJ/kmol
Molar Entropy (Mixture)	-106.295	kJ/[kmol.K]
Thermal Conductivity (Mixture)	0.675345	W/[m.K]
Molar Fraction (Vapor)		
Methanol	0	
Water	0	
Molar Fraction (Overall Liquid)		
Methanol	0.0032349	
Water	0.996765	
Molar Fraction (Liquid 1)		
Methanol	0.0032349	
Water	0.996765	
Molar Fraction (Liquid 2)		
Methanol	0	
Water	0	
Molar Fraction (Aqueous)		
Methanol	0	
Water	0	
Molar Fraction (Solid)		
Methanol	0	
Water	0	

Object: Distillate

Simulation Report

DWSIM 9.0

Details

Title: MySimulation_33

Comments:

Temperature	64.7487	C
Pressure	1	atm
Mass Flow	0.44595	kg/s
Molar Flow	50.32	kmol/h
Volumetric Flow	0.000593173	m3/s
Mixture Molar Fraction		
Methanol	0.990184	
Water	0.00981569	
Density (Mixture)	751.803	kg/m3
Molecular Weight (Mixture)	31.9042	kg/kmol
Specific Enthalpy (Mixture)	-1126.37	kJ/kg
Specific Entropy (Mixture)	-3.29389	kJ/[kg.K]
Molar Enthalpy (Mixture)	-35935.9	kJ/kmol
Molar Entropy (Mixture)	-105.089	kJ/[kmol.K]
Thermal Conductivity (Mixture)	0.192333	W/[m.K]
Molar Fraction (Vapor)		
Methanol	0	
Water	0	
Molar Fraction (Overall Liquid)		
Methanol	0.990184	
Water	0.00981569	
Molar Fraction (Liquid 1)		
Methanol	0.990184	
Water	0.00981569	
Molar Fraction (Liquid 2)		
Methanol	0	
Water	0	
Molar Fraction (Aqueous)		
Methanol	0	
Water	0	
Molar Fraction (Solid)		
Methanol	0	
Water	0	

Object: Feed

Type: Material Stream

Simulation Report

DWSIM 9.0

Details

Title: MySimulation_33

Comments:

Temperature	80	C
Pressure	1	atm
Mass Flow	0.695238	kg/s
Molar Flow	100	kmol/h
Volumetric Flow	0.548963	m3/s
Mixture Molar Fraction		
Methanol	0.5	
Water	0.5	
Density (Mixture)	1.26646	kg/m3
Molecular Weight (Mixture)	25.0286	kg/kmol
Specific Enthalpy (Mixture)	-446.226	kJ/kg
Specific Entropy (Mixture)	-0.968073	kJ/[kg.K]
Molar Enthalpy (Mixture)	-11168.4	kJ/kmol
Molar Entropy (Mixture)	-24.2295	kJ/[kmol.K]
Thermal Conductivity (Mixture)	0.14597	W/[m.K]
Molar Fraction (Vapor)		
Methanol	0.622125	
Water	0.377875	
Molar Fraction (Overall Liquid)		
Methanol	0.238369	
Water	0.761631	
Molar Fraction (Liquid 1)		
Methanol	0.238369	
Water	0.761631	
Molar Fraction (Liquid 2)		
Methanol	0	
Water	0	
Molar Fraction (Aqueous)		
Methanol	0	
Water	0	
Molar Fraction (Solid)		
Methanol	0	
Water	0	

Object: R-Duty

Type: Energy Stream

Simulation Report

DWSIM 9.0

Details

Title: MySimulation_33

Comments:

Energy Flow	564.265	kW

Object: C-Duty

Type: Energy Stream

Property	Value	
Energy Flow	1311.19	kW

Object: DCOL-1

Type: Distillation Column

Property	Value	
Condenser Pressure Drop	0	atm
Condenser Duty	1311.19	kW
Reboiler Duty	-564.265	kW
Number of Stages	15	
Column Pressure Drop	0	atm
Stage_Pressure_1	1	atm
Stage_Pressure_2	1	atm
Stage_Pressure_3	1	atm
Stage_Pressure_4	1	atm
Stage_Pressure_5	1	atm
Stage_Pressure_6	1	atm
Stage_Pressure_7	1	atm
Stage_Pressure_8	1	atm
Stage_Pressure_9	1	atm
Stage_Pressure_10	1	atm
Stage_Pressure_11	1	atm
Stage_Pressure_12	1	atm
Stage_Pressure_13	1	atm
Stage_Pressure_14	1	atm
Stage_Pressure_15	1	atm
Stage_Efficiency_1	1	
Stage_Efficiency_2	1	

Details

Title: MySimulation_33

Comments:

Stage_Efficiency_3	1	
Stage_Efficiency_4	1	
Stage_Efficiency_5	1	
Stage_Efficiency_6	1	
Stage_Efficiency_7	1	
Stage_Efficiency_8	1	
Stage_Efficiency_9	1	
Stage_Efficiency_10	1	
Stage_Efficiency_11	1	
Stage_Efficiency_12	1	
Stage_Efficiency_13	1	
Stage_Efficiency_14	1	
Stage_Efficiency_15	1	
Stage_Temperature_1	64.7487	C
Stage_Temperature_2	64.9494	C
Stage_Temperature_3	65.2375	C
Stage_Temperature_4	65.6516	C
Stage_Temperature_5	66.2481	C
Stage_Temperature_6	67.1092	C
Stage_Temperature_7	68.3559	C
Stage_Temperature_8	70.1613	C
Stage_Temperature_9	72.7356	C
Stage_Temperature_10	76.1392	C
Stage_Temperature_11	79.7521	C
Stage_Temperature_12	85.3233	C
Stage_Temperature_13	92.8052	C
Stage_Temperature_14	97.6043	C
Stage_Temperature_15	99.3844	C
Condenser_Specification_Value	1.5	
Reboiler_Specification_Value	13.8	
Global_Stage_Efficiency	G6	
Condenser_Calculated_Value	1.5	
Reboiler_Calculated_Value	13.8	
Stream 'Feed' Stage Index	10	
Stream 'Distillate' Stage Index	0	
Stream 'Residue' Stage Index	14	
Estimated Height	8500	mm
Estimated Diameter	991.858	mm