

CLIENT : GASSNOVA  
 PROJECT TITLE : CO2 KARSTO  
 JOB NUMBER : 25474  
 M.R. NUMBER :  
 EQUIPMENT NUMBER : ME-108  
 EQUIPMENT TITLE : LEAN / RICH AMINE HEAT EXCHANGER  
 CRITICALITY RATING :  
 PROCESS DATASHEET No :  
 (REV / DATE / DESCRIPTION)

COMMENTS:

- A. Vendor to add all missing data.
- B. Vendor to advise number and configuration of exchangers required.
- C. Datasheet is valid for all cases. Determining case is Winter.
- D. Turndown of 70% on flow and duty required with all exchangers in service.
- E. Welded-type plate heat exchanger is preferred.

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1	14-Nov-08	ISSUED FOR INFORMATION INCLUDING COMMENTS P0038	JS	MJC	DM	ADB	BR	1
0	07-Oct-08	ISSUED FOR DELIVERABLE MILESTONE SCHEDULE M2	JS	MJC	DM	ADB	BR	
REV	DATE	DESCRIPTION	Orig.	Chkd	LE	Chief	PEM	



HEAT EXCHANGER (PLATE) DATA SHEET

Job No 25474  
 Process Datasheet No. REV  
 BECHTEL: 25474-000-M5D-CN-00031 1  
 OWNER: 10112936-PB-P-DAS-0003  
 Sheet 1 of 4

REVISION

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 2 Applicable To:  Proposal  Purchase  As Built  ASME  API  Other \_\_\_\_\_  
 3 Manufacturer \_\_\_\_\_ Model \_\_\_\_\_ Serial No. \_\_\_\_\_  
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**GENERAL DATA**

Stream Number	Stream Name	Fluid Quantity	1		2		3		4	
			IN	OUT	IN	OUT	IN	OUT	IN	OUT
9	Vapour	kg/h	-	-	-	-				
10	Liquid	kg/h	2.228E+06	2.228E+06	2.044E+06	2.044E+06				
11	Steam	kg/h	-	-	-	-				
12	Water	kg/h	-	-	-	-				
13	Non-Condensable	kg/h	-	-	-	-				
14	Temperature	°C	53.55	120.00	129.38	58.64				
15	Vapour		-	-	-	-				
16	Density	kg/m³	-	-	-	-				
17	Viscosity	Pa.s	-	-	-	-				
18	Thermal Conductivity	W/(m-K)	-	-	-	-				
19	Specific Heat	kJ/(kg-K)	-	-	-	-				
20	Molecular Weight		-	-	-	-				
21	Liquid		-	-	-	-				
22	Density	kg/m³	1151.40	1130.40	1063.38	1097.78				
23	Viscosity	Pa.s	0.002560	0.000654	0.000493	0.001833				
24	Thermal Conductivity	W/(m-K)	0.382	0.395	0.416	0.407				
25	Specific Heat	kJ/(kg-K)	3.339	3.901	3.893	3.487				
26	Inlet Pressure	kPag	974	870	542	372				
27	Velocity	m/s								
28	Latent Heat	kJ/kg								
29	Pressure Drop Allow.	kPa	100		70					
30	Pressure Drop Calc.	kPa								
31	Fouling Factor	m²·°C/W	(NOTE 1)		(NOTE 1)					
32	Number of Passes									
33	Heat Exchanged	kW	148031		148031					
34	MTD	°C								
35	Transfer Rate Clean	kW/(m²-K)								
36	Transfer Rate Service	kW/(m²-K)								

**CONSTRUCTION**

39	Number of Cores per Unit									
40	Core Width	mm								
41	Core height	mm								
42	Core Length	mm								
43	Parting Sheet Thickness	mm								
44	Outside Sheet Thickness	mm								
45	Number of Dummy Layers									
46	Number of Passages									
47	Passage Width ( Effective)	mm								
48	Passage Length ( Effective)	mm								
49	Fin Type									
50	Fin Height x Thickness	mm								
51	Number of Fins per Inch									
52	Surface Area ( Effective)	m²								
53	Distributor									
54	Nozzles.		IN	OUT	IN	OUT	IN	OUT	IN	OUT
55	Rating									
56	Size	mm								
57	Number									
58	Design Pressure	kPag	2076		1769					
59	Test Pressure	°C								
60	Design Temperature Max	°C	160		160					
61	Design Temperature Min	°C	-17		-17					
62	Design Code									
63	Manufacturing Standards									
64	Weights Operating	N								
65	Weights Full of water	N								



**HEAT EXCHANGER (PLATE) DATA SHEET**

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OWNER: 10112936-PB-P-DAS-0003	
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**COLD BOX**

Stream Number  
Stream Name  
Dimensions  
Width mm  
Depth mm  
Height mm  
Material - (Note 2)  
Structural Design Code  
Wind Load Design Code  
Seismic Zone  
Insulation Filling

1	2	3	4
RICH AMINE	LEAN AMINE		
SS 304L	SS 304L		

**DESIGN DATA**

	Temperature °C	Pressure kPaa	Enthalpy kj/kg	Vapour Fraction Mol %	Vapour Fraction Weight %	Heat Duty kW
1	53.58	763.86		0.00	0.00	0.00
2	67.64	743.18		0.00	0.00	29606.11
3	81.31	722.49		0.00	0.00	59212.22
4	94.60	701.81		0.00	0.00	88818.33
5	107.51	681.12		0.00	0.00	118424.72
6	120.00	660.44		0.00	0.00	148030.83

HEAT RELEASE CURVE - STREAM 1

	Temperature °C	Pressure kPaa	Enthalpy kj/kg	Vapour Fraction Mol %	Vapour Fraction Weight %	Heat Duty kW
1	129.38	563.33		0.00	0.00	0.00
2	115.83	552.54		0.00	0.00	-29606.11
3	101.98	538.75		0.00	0.00	-59212.22
4	87.84	524.97		0.00	0.00	-88818.33
5	73.41	511.18		0.00	0.00	-118424.72
6	58.64	497.39		0.00	0.00	-148030.83

HEAT RELEASE CURVE - STREAM 2

	Temperature °C	Pressure kPaa	Enthalpy kj/kg	Vapour Fraction Mol %	Vapour Fraction Weight %	Heat Duty kW
1						
2						
3						
4						
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HEAT RELEASE CURVE - STREAM 3

	Temperature °C	Pressure kPaa	Enthalpy kj/kg	Vapour Fraction Mol %	Vapour Fraction Weight %	Heat Duty kW
1						
2						
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HEAT RELEASE CURVE - STREAM 4



HEAT EXCHANGER (PLATE) DATA SHEET

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REVISION

1 **NOTES:**

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- 1. Vendor to advise margin to account for fouling in amine service (minimum 10%).
- 2. Vendor to confirm material selection based on own product experience in amine service.



**HEAT EXCHANGER (PLATE) DATA SHEET**

Job No	25474	
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