



Toase-ehe Park Sanati Gohar Ofogh
Petrochemical Co.
**CONCEPTUAL, BASIC and DETAIL DESIGN
ENGINEERING OF STYRENE PARK OFFSITE**



Document Title: Chiller (Evaporator) Data Sheet

Document No.: EI027-HSE-VD –ME–DSH–007- R2

Rev. R2

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STYRENE PARK OFFSITE

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Chiller (Evaporator) Data Sheet

Rev.	Issued Date	DESCRIPTION	PREPARED	CHECKED	APPROVED
R2	07-05-2024	IFA	F.sh	M.O	A.M
R1	08-04-2024	IFA	F.sh	M.O	A.M
R0	21-02-2024	IFA	F.sh	M.O	A.M



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REVISION RECORD SHEET

Page Page	Revisions							Page	Revisions						
	R0	R1	R2	R3	R4	R5	R6		R0	R1	R2	R3	R4	R5	R6
1	X	X	X					41							
2	X	X	X					42							
3	X	X	X					43							
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HEAT EXCHANGER SPECIFICATION SHEET

Page 3

Released to the following company:

ali Units

SC
SSD

Job No.

Customer	PAD JAM PETROCHEMICAL		Reference No.	
Address			Proposal No.	
Plant Location	ASSALOUYEH	Date	5/5/2024	Rev 3
Service of Unit	Evaporator	Item No.	RU-0001A-E-02	
Size	600 - 924.32 x 2300 mm	Type	BKU Horizontal	Connected In 1 Parallel 1 Series
Surf/Unit (Gross/Eff)	57.259 / 54.598 m ²	Shell/Unit	1	Surf/Shell (Gross/Eff) 57.259 / 54.598 m ²

PERFORMANCE OF ONE UNIT

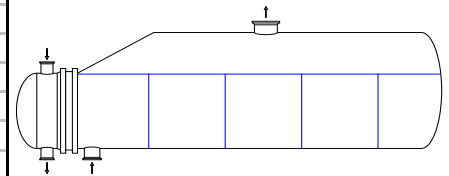
		Shell Side		Tube Side	
Fluid Allocation		Propane		Styrene	
Fluid Name		Propane		Styrene	
Fluid Quantity, Total kg/hr		2796.0		36930	
Vapor (In/Out)		1200.6	2796.0		
Liquid		1595.4		36930	36930
Steam					
Water					
Noncondensables					
Temperature (In/Out) C		0.85	0.63	15.20	5.00
Specific Gravity		0.5279	0.0103	0.9100	0.9184
Viscosity mN-s/m ²		0.0077 V/L 0.1261	0.0077	0.8200	0.9600
Molecular Weight, Vapor					
Molecular Weight, Noncondensables					
Specific Heat kJ/kg-C		1.6880 V/L 2.5415	1.6863	1.6040	1.5780
Thermal Conductivity W/m-C		0.0159 V/L 0.1090	0.0159	0.1500	0.1500
Latent Heat kJ/kg		376.07	376.40		
Inlet Pressure bar		4.860		5.500	
Velocity m/s		0.19		0.61	
Pressure Drop, Allow/Calc bar		0.160	0.034	0.200	0.096
Fouling Resistance (min) m ² -K/W		0.000170		0.000200	

Heat Exchanged	0.1666 MegaWatts	MTD (Corrected)	8.4 C
Transfer Rate, Service	364.60 W/m ² -K	Clean	498.24 W/m ² -K
		Actual	413.39 W/m ² -K

CONSTRUCTION OF ONE SHELL

Sketch (Bundle/Nozzle Orientation)

		Shell Side		Tube Side	
Design/Test Pressure barG		22.000 /		6.800 /	
Design Temperature C		120.00		85.00	
No Passes per Shell		1		4	
Corrosion Allowance mm		3		3	
Connections	In mm	1 @ 92.050		1 @ 77.927	
	Out mm	1 @ 146.33		1 @ 77.927	
	Rating	@		@	



Tube No.	188U	OD	19.050 mm	Thk(Avg)	1.651 mm	Length	2.300 m	Pitch	23.813 mm
Tube Type	Plain		Material		SA-334 6	Tube pattern		30	
Shell	SA-516 70N	ID	600.00	OD	622.22 mm	Shell Cover	SA-516 70N	(Integ.)	
Channel or Bonnet	SA-516 70N		Channel Cover		SA-516 70N				
Tubesheet-Stationary	SA-350 LF2 CL.1		Tubesheet-Floating						
Floating Head Cover			Impingement Plate		Circular plate				
Baffles-Cross	Carbon steel	Type	Support	%Cut (Diam)	Spacing(c/c)	562.70	Inlet	mm	
Baffles-Long			Seal Type		None				
Supports-Tube			U-Bend		Type Full support				
Bypass Seal Arrangement	pairs seal strips		Tube-Tubesheet Joint		Expanded (2 grooves)				
Expansion Joint			Type		None				
Rho-V2-Inlet Nozzle	570.74	kg/m-s ²	Bundle Entrance		Bundle Exit		kg/m-s ²		
Gaskets-Shell Side	Mach. Mtl. (Kammprofile\Flex. Face)		Tube Side		Mach. Mtl. (Kammprofile\Flex. Face)				
- Floating Head		Mach. Mtl. (Kammprofile\Flex. Face)							
Code Requirements				TEMA Class		R			
Weight/Shell	1966.5	kg	Filled with Water	3813.8	kg	Bundle	791.24	kg	

Remarks: Supports/baffle space = 3.

Full Vacuum on Shell Side and Tube Side will be considered.

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