



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	20-04-2024	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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HTRI		HEAT EXCHANGER SPECIFICATION SHEET				Units
		Released to the following company:				
		SC		Job No.		
		SSD		Reference No.		
Customer	PAD JAM PETROCHEMICAL			Proposal No.		
Address				Date	4/14/2024	
Plant Location	ASSALOUYEH			Rev	2	
Service of Unit	Evaporator			Item No.	RU-0001A-E-02	
Size	600 - 924.32 x 2500 mm	Type	BKU Horizontal	Connected In	1 Parallel 1 Series	
Surf/Unit (Gross/Eff)	61.76 / 58.956 m2	Shell/Unit	1	Surf/Shell (Gross/Eff)	61.76 / 58.956 m2	
PERFORMANCE OF ONE UNIT						
Fluid Allocation	Shell Side		Tube Side			
Fluid Name	Propane		Styrene			
Fluid Quantity, Total	kg/hr	3104.1		40623		
Vapor (In/Out)		1346.2	3104.1			
Liquid		1757.8		40623	40623	
Steam						
Water						
Noncondensables						
Temperature (In/Out)	C	1.24	1.00	15.20	5.00	
Specific Gravity		0.5331		0.9100	0.9184	
Viscosity	mN-s/m2	0.0076 V/L 0.1294	0.0076	0.8200	0.9600	
Molecular Weight, Vapor						
Molecular Weight, Noncondensables						
Specific Heat	kJ/kg-C	1.7859 V/L 2.4339	1.7838	1.6040	1.5780	
Thermal Conductivity	W/m-C	0.0161 V/L 0.1090	0.0160	0.1500	0.1500	
Latent Heat	kJ/kg	375.43	375.75			
Inlet Pressure	bar	4.813		5.500		
Velocity	m/s	0.18		0.67		
Pressure Drop, Allow/Calc	bar	0.050	0.036	0.500	0.118	
Fouling Resistance (min)	m2-K/W	0.000170		0.000200		
Heat Exchanged	0.1832 MegaWatts	MTD (Corrected)		7.9	C	
Transfer Rate, Service	391.37 W/m2-K	Clean	524.10 W/m2-K	Actual	431.04 W/m2-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	3.175	3.175			
Connections	In mm	1 @ 92.050	1 @ 77.927			
Size & Rating	Out mm	1 @ 146.33	1 @ 77.927			
	Intermediate	@	@			
Tube No.	188U	OD 19.050 mm	Thk(Avg) 1.651 mm	Length 2.500 m	Pitch 23.813 mm	
Tube Type	Plain		Material SA-334 6 Tube (S) K03006 Tube pattern30			
Shell	SA-516 70 PI. K02700 ID 600.00 OD 622.22 mm		Shell Cover SA-516 70 PI. K02700 (Integ.)			
Channel or Bonnet	SA-516 70 PI. K02700		Channel Cover SA-516 70 PI. K02700			
Tubesheet-Stationary	SA-105 Forgings K03504		Tubesheet-Floating			
Floating Head Cover	Impingement Plate Circular plate					
Baffles-Cross	Carbon steel	Type Support	%Cut (Diam)	Spacing(c/c) 612.70	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	714.96 kg/m-s2	Bundle Entrance		Bundle Exit	kg/m-s2	
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	2077.4 kg	Filled with Water	4053.1 kg	Bundle	836.05 kg	
Remarks: Supports/baffle space = 3.						
Note: Reported duty and flow rates include a user-specified multiplier of 1.10.						
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