



Toase-e 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- R1

Rev. R1

Page 1 of 3

STYRENE PARK OFFSITE

Document Title:
Chiller (Evaporator) Data Sheet

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



Toase-eh 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- R1

Rev. R1

Page 2 of 3

REVISION RECORD SHEET

Page Page	Revisions							Page	Revisions						
	R0	R1	R2	R3	R4	R5	R6		R0	R1	R2	R3	R4	R5	R6
1	X							41							
2	X							42							
3	X							43							
4								44							
5								45							
6								46							
7								47							
8								48							
9								49							
10								50							
11								51							
12								52							
13								53							
14								54							
15								55							
16								56							
17								57							
18								58							
19								59							
20								60							
21								61							
22								62							
23								63							
24								64							
25								65							
26								66							
27								67							
28								68							
29								69							
30								70							
31								71							
32								72							
33								73							
34								74							
35								75							
36								76							
37								77							
38								78							
39								79							
40								80							



Toase-eh 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- R1

Rev. R1

Page 3 of 3



HEAT EXCHANGER SPECIFICATION SHEET

Released to the following company:

SI Units

SC
SSD

Job No.

Customer	PAD JAM PETROCHEMICAL	Reference No.	
Address		Proposal No.	
Plant Location	ASSALOUYEH	Date	4/8/2024 Rev
Service of Unit	Evaporator	Item No.	
Size	600 - 924.32 x 2500 mm	Type	BKU Horizontal
Surf/Unit (Gross/Eff)	61.76 / 58.956 m2	Shell/Unit	1
		Surf/Shell (Gross/Eff)	61.76 / 58.956 m2

PR CM: Discrepancy with PFD

PERFORMANCE OF ONE UNIT

Fluid Allocation	Shell Side		Tube Side	
	Propane		Styrene	
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		3.000	
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	

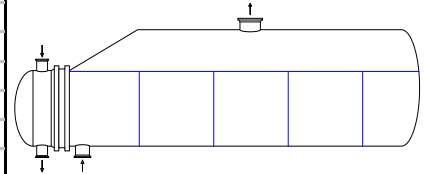
Kindly complete these columns by both vapor and liquid

PR CM: Discrepancy with PFD

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
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 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		Tube sheet	Floating			
Tube sheet	SA-350 LF2 CL.1	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-Tube sheet 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.

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

Note: Reported duty and flow rates include a user-specified multiplier of 1.10.

Reprinted with Permission (v8.0.0.1)