



Toase-ehe Park Sanati Gohar Ofogh Petrochemical Co.

**CONCEPTUAL, BASIC and DETAIL DESIGN
ENGINEERING OF STYRENE PARK OFFSITE**

Document Title: Process Data sheet For Styrene Vent Blower

Document No. : EI027-000-ED-PR-DSH-504



BINA EPC Contractor Co.
(Executor of Oil, Gas, Petrochemical & Power Industries)

Rev. R1

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STYREN PARK OFFSITE

Document Title:

PROCESS DATA SHEET FOR STYRENE VENT BLOWER

R1	28.07.2020	FINAL ISSUE (FI)	M.Abbasian	S.Behniafar	R.Memar
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	R0	R1	R2	R3	R4	R5	R6		R0	R1	R2	R3	R4	R5	R6
1	x	x						41							
2	x	x						42							
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		Toase-ehe Park Sanati Gohar Ofogh Petrochemical Co. CONCEPTUAL, BASIC and DETAIL DESIGN ENGINEERING OF STYRENE PARK OFFSITE				 BINA EPC Contractor Co. (Executor of Oil, Gas, Petrochemical & Power Industries)		
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1	SERVICE	STYRENE VENTS BLOWER				ITEM	B-0001A~D	
3	GENERAL	TYPE	CENTRIFUGAL		SOURCE			
4		No. REQUIRED ITEMS		4	ARRANGEMENT	2+2		
5		NUMBER OF START-UP/UNIT OF TIME		(1)	INTERVAL BETWEEN START-UPS	(1)		
6		INSTALLATION	OUTDOOR UNDER SHELTER(3)		HAZ. AREA CLASSIFICATION	(17)		
7	HANDLED FLUID	SUCKED GAS			(2)			
8		COMPOSITION			(2)			
9		HAZARD IDENTIFICATION (RISK PHRASES)			(10,15)			
10		MIST OR DUST (YES/NO) IF YES INDICATE PARTICLE SIZE, %, DENSITY IN NOTES			NO			
11		CORROSIVE / EROSION AGENTS			NO / NO			
12	OPERATING CONDITIONS	SUCTION TEMPERATURE MIN / NORM / MAX		°C	/ AMB /			
13		RELATIVE HUMIDITY AT SUCTION CONDITION			(3)			
14		GAS DENSITY AT SUCTION CONDITION		kg/m³	2.9 (2,11)			
15		GAS DENSITY @ 0 °C and 1 bar a		kg/Nm³	1.293			
16		GAS VISCOSITY AT SUCTION TEMPERATURE		cP	0.02			
17		STATIC SUCTION PRESSURE		mbar	933 (5)			
18		CAPACITY MIN / NORM / RATED (FOR EACH FAN)		Nm³/h	/ 1080 / 1188			
19		STATIC DISCHARGE PRESSURE AT RATED CAPACITY		mbar	1080			
20		DYNAMIC DISCHARGE PRESSURE AT RATED CAPACITY		mbar	BY VENDOR			
21		SPEED AT DISCHARGE MIN / NORM / RATED		m/s	BY VENDOR			
22		TOTAL HEAD		mbar	87 (5)			
23		ESTIMATED EFFICIENCY AT RATED CONDITIONS		%	50			
24		FLOW RATE REGULATION (VALVE ON SUCTION-DISCHARGE/SPEED VARIATION/AERODYNAMIC/OTHER)		NO				
25		FLOWRATE REGULATION VALVE TYPE		N/A				
26	FLOWRATE REGULATION CONTROL (MANUAL / AUTOMATIC)		N/A					
27	START-UP CONDITIONS / WITH DELIVERY VALVE		AUTO START / OPEN					
28	DESIGN DATA	DESIGN PRESSURE OF CASING		bar g	3.5			
29		DESIGN TEMPERATURE		°C	85			
31		MINIMUM AMBIENT TEMPERATURE		°C	5 (3)			
33		MATERIAL IN CONTACT WITH HANDLED FLUID		CS (7)(22)				
34		MATERIAL TO BE AVOIDED IN CONTACT WITH HANDLED FLUID		BY VENDOR				
35		GASKETS (MATERIAL, TYPE) IN CONTACT WITH HANDLED FLUID		(9)				
36		CORROSION ALLOWANCE		mm	3			
37		NOISE LEVEL AT 1 m DISTANCE (WITH/WITHOUT MOTOR)		dB(A)	85			
38	CONSTRUCTION DATA	IMPELLER TYPE (AXIAL / RADIAL /OTHER)			RADIAL (22)			
39		INSPECTION DOOR / VOLUTE CLEANING LOWER DOOR			/			
40		SEALS	TYPE		LABYRINTH (22)			
41		HEATING / COOLING	FLUID / MAX AV. FLOW RATE / MAX AV.ΔP		m³/h / bar	/ N/A /		
42	REQ.DES PRESSURE /REQ.DES TEMP.		barg / °C	N/A				
43	CONNECTIONS	SUCTION LINE	DIAMETER / RATING / FACING / GASKET		6 in / 150# / RF / (9)(22)			
44		DISCHARGE LINE	DIAMETER / RATING / FACING / GASKET		6 in / 150# / RF / (9)(22)			
45		VENT / DRAIN / TYPE (WITH PLUG OR FLANGE)			NO / YES			
46		PRESSURE GAUGE / TEMPERATURE GAUGE / OTHER			/ N/A /			
47	ACCESSORIES INCL. IN THE SUPPLY	RELIEF VALVE, VIBRATION DAMPER, SILENCER, ETC...			BY VENDOR (23)			
48	DRIVER (24)	TYPE	OTHER		ELECICAL MOTOR /			
49		ESTIMATED ABSORBED POWER AT SHAFT		kW	(4)			
50		ESTIMATED NOMINAL POWER		kW	9			
51		ROTATION SPEED - PREFERRED		RPM	1500			
52		ELECTRICAL SUPPLY	VOLTAGE / FREQUENCY / PHASES No.		V / Hz /	400/50/3		
53		ELECTRICAL PROTECTION: TYPE / ENCLOSURE			(20) / (21)			
54	CODES	DESIGN CODES / STANDARDS			(16) (21)			



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55	NOTE 1	Continuous operation; 1 unit in stand - by.
56	NOTE 2	Gas mole composition and molar mass:
57		Fluid: molar mass mole composition
58		Air/ Nitrogen 28.84/28 ~100%
59		Water 18.02 see note 3
60		Styrene 104 traces (max 3.5 g/Nm3)
61	NOTE 3	For site condition refer to EI027-000-ED-PR-SPC-002
62	NOTE 4	Absorbed and installed power to be confirmed / defined by Vendor.
63	NOTE 5	To be confirmed according to final layout.
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65	NOTE 7	Basic material: carbon steel; other parts: Vendor's standard
66	NOTE 8	Blower: API 672 or MFR. std.
67	NOTE 9	Gasket type A: plastic flat gasket in graphite with peripheral insert in SS.
68	NOTE 10	Risk phases: Styrene: R10, R20, R36/38; Water: None;
69	NOTE 11	Vendor shall include, if necessary, flexible connections at blower suction and delivery sides.
70	NOTE 12	Gas compressibility factor: 1; gas molecular mass: about 28.84 kg/kmol.
71	NOTE 13	Gas CP/CV: 1.4
72	NOTE 14	Vendor shall specify the temperature increase of the fluid at design condition. Maximum temperature at delivery side: 70°C.
73	NOTE 15	Classification as per NFPA 704 Health Hazard Classification: 2
74		Fire Hazard Classification: 3 Reactivity Hazard Classification: 2
75	Note 16	Coupling guard shall be non spark type and full enclosed. The surface temperature shall be lower than 65 °C
76	Note 17	Refer to Hazardous area Classification Job Specification,P9255-000-DE-SF-SPC-004
77	Note 18	Mechanical design to be defined by blower Vendor
78	Note 19	No.2 set of blower gaskets shall be included in the scope of supply for commissioning and start-up spare parts.
79	Note 20	The degree of protection of motors and auxiliaries shall be at least IP 55. The degree of protection of terminal box and bearing housings shall be IP 55.
80	Note 21	Electrical motors shall be in full compliance with documents:
81		"General Electrical Specification for Packages",EI027-000-ED-EL-SPC-001
82		General Specification for low Voltage Motors,EI027-000-ED-EL-SPC-002
83	Note 22	It will be confirmed by vendor.
84	Note 23	Flexible joints at suction and discharge are recommended to be considered.
85	Note 24	Use of gear box is not preferred.
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