Page	1	of	3	

## FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. N	lanufactured	l and ce	ertified by		ki Zhicheng ark,B Zone			han Distr		y, Jiangsu	Province					
2. N	lanufactured	l for							Not know	'n	,					
3. L	ocation of in	stallatio	on					(Name	and address of Not kno	,						
									(Name and a							
4. T	уре		Ve Horizontal, ve	rtical ertical, or sph	ere)	(Oi		eat exch	exchanger anger W521 ikt. vessel, heat		(-758)		WZ (Manufacture	A21-2		
_		N/			W	CZC21A1		v.1		152				202	,	
E ^	SME Codo	(CR	•		2010 E	(Drawing	number)			(National Boa	rd number)			(Year b	uilt)	
5. A	SME Code,	Section	1 VIII, DIV. 1		2019 E on and Addenda		e (date)]	-		se number)			Special servi	NA ce per l	JG-120(d)]	
					wall vessels,		f jacketed	vessels,			rs, or cham	ber of multi			s.	
6. S			er of course			3			(b) Overall				2914mm			
No.	Diamete	urse(s)	Length		//aterial ec./Grade		kness		ong. Joint (Ca Full, Spot	1		Joint (Cat. A Full, Spot			eat Treatm	
10.			Length		or Type	Nom.	Corr.	Туре	None	" Eff.	Туре	None	' Eff.	Ter	mp.	Time
1	See attack															
	1 of 2															
							Body	Flanges	on Shells							
No.	Туре	ID	OD	Flange		Mater	ial	How	Location			Bo Bolting	lting Washe	)r	Wash	or
140.	Турс	"	- 00	Thk	Thk	Iviatei	At	ttached	Location	Num & S		Material	(OD, ID,		Mate	
NA																
7. H	eads: (a)				NA				(b)				NA			
					ber, grade or ty	pe) (H.T. — t	time and tem	np.)		1)		number, grade	e or type) (H.	T. — tin	ne and temp.	)
	Location (Top,		Thickness	8	Radius	Ellip	tical I	Conical	Hemispherica	al Flat	Side t	o Pressure			tegory A	T
	Bottom, Ends)	- 1	Min. C	orr. Cre	own Knuc	kle Ra	tio I	Apex Angle	Radius	Diameter	Convex	Concave	е Туре	-	Full, Spot, None	Eff.
(a)	NA															
							Body	Flanges o	n Heads	T			10.			
	Location	Ту	rpe l	D 0	D Flange Thk	Min H Thk		laterial	How Attached	Num & S		Bolting Material	Washe (OD, ID,		Wash	
(a)	NA															
8. T	ype of jacke	t			NA				Jacket closur	e			NA			
	haran alta alta			4								Describe as o	gee and weld	d, bar, et	tc.)	
	bar, give dir	nensio			1110-	-1 1		220℃	220°		NA .		10℃		. 12	MPa
9. 10	IAWP	(Intern			ternal)	at max. ten		nternal)	(Extern		design met	al temp.	-10℃	a	t	IVIFA
10.	Impact test				No [Indicate yes or	Per UHA			stedl		at	test tempera	ature of _		NA	
11.	Hydro., pneı	ı., or co	omb. test pr	essure		est at 1.6				oof test			NA			
Iten	ns 12 and 13	3 to be	completed	for tube s	ections.					_						
			SA-240			640mm/6			40mm/40n							
12.	Tubesheet	[Sta	(Top & E tionary (mate		] [Dia	(O.E meter (subje		] -	(Nominal thickr		0mm/0mi (Corr. allow				Velded ded or bolted	1)]
NA [Floating (material spec. no.)]						NA			NA (Naminal History		NA			NA		
13	Tubes		SA-213 TF			(Diame 19.05r			(Nominal thickr		(Corr. allow 336 pcs	,		Attachn	<sup>nent)</sup> 3000mm)	
			al spec. no., (			(O.D.	)	-	(Nominal thicks	ness)	(Number)				ght or U)]	
							Che	nvnei	12.22			); anywar	J Non	1		
								2021.	12.22			, , ,	22	. 20°	2	
												Decembe	N LV	, .		

FORM U-1

Manu	in at use of bound						10	Juvi Zhiah	ona Diochom	ical Engin	o o ri r		innaant	Ca. 14		age		_ 01 _	
	actured by acturer's S	_	0		WZ	A21-22			eng Biochem	NA					rd No			152	
Item	s 14–18 ind	cl. to b	e com	pleted	for inn	er chamb	ers of jac	keted vess	sels or channe	els of heat	excha	angers.							
14. S	hell: (a	ı) Num	ber of	course(	s)		1/1 (To	p/Bottom)		(b) Ove	rall le	ength			127mm/4	27mm	ı (Top/E	Bottom)	
	Cou	rse(s)				aterial	Th	nickness		Joint (Cat.	A)		Circun		(Cat. A, B			Heat Tre	atment
No.	Diame	ter	Leng	gth		c./Grade r Type	Non	n. Corr.	Туре	Full, Spot, None	Ef	f.	Туре		Full, Spot, None	Eff		Гетр.	Time
1	530mm Fig. 2-4(8) NA													NA					
2	530mm   Fig. 2-4(8)   NA																		
									Body Flanges	on Shells									
No.	Туре	ID	(	DD	Flang Thi		n Hub Thk	Material	How Attached	Locatio	n	Num 8	& Size		Bo olting aterial	1	/asher , ID, thk)		/asher aterial
1	FM	545 mm		640 nm	Nomi 63m		NA	SA-182 F304	Welded	Тор		20 M16X1		SA-	193 B8		.43.5/I.D .5/T3.5		240 304
			+-								+		3011111				(mm)		
2	FM	545 mm		540 nm	Nomi 63m		NA	SA-182 F304	Welded	Тор		20 M16X1		SA-	193 B8	17	.43.5/I.D .5/T3.5		240 304
15. H	leads: (a)	To	p: SA				ng, NOT		and town )	(	b)	Botto				formi		T PWHT	
	(Material spec. number, grade or type) (H.T. — time and temp.)  Location Thickness Radius Conical Side to Pressure Category A																		
	(Top, Bottom, Ends)	Top, Dittom, Min. Corr. Crown Knuckle Ratio Apex Radius Diameter Convex								Туре	Full, Spo	ot, Fff							
(a)	Top		7mm		)mm	R 530 mm	R 53 mm	NA	NA	N/	4	N	IA	No	Ye	s	S	Full	0.85
(b)	Bottom		7mm		mm	R 530	R 53	NA	NA	N/	Ą	N	IA	No	Ye	Yes		Full	0.85
									Body Flanges	on Heads									
	Location	T	/ре	ID		OD	Flange	Min Hub	Material	How				I Bo	Boolting	olting	Vasher	T v	Vasher
		-	-		_		Thk	Thk		Attache	d	Num 8	& Size		aterial		), ID, thk		laterial
(a)	NA																		
16. N	IAWP	1.2N		_		0.1 (External)	at n	nax. temp.	220°C (Internal)		220°( Extern		Min. des	sign me	tal temp.		10℃	at	1.2MPa
17. lr	npact test						No, Pe	er UHA-51	(d)(e)(h)	,				at te	est temper	rature o	of	NA	
18 H	ydro., pneı	ı orce	omb te	est nres	sure				onent(s) impact to Pa (Horizonta		Proc	of test				N	Δ		
	ozzles, ins				-		410. 100	. at 1.001vii	1 4 (11011201118	41/	1100	or test	-			14.			
Pı	ırpose		Diam					Materi	al	Nozzle	Thick	ness	Deier		, A	Attachn	nent De	tails	Location
,	t, Outlet, in, etc.)	No.		neter or Size		Туре	N	ozzle	Flange	Nom.		Corr.		orcemer aterial		ozzle	F	lange	(Insp. Open.)
See	attached																		
	m U-4 e 2 of 2																		
20. S	upports: SI	kirt _	(Yes	IA or no)	Lug	s (Num		Legs	NA Othe	ers	7	7 Lifting	g lugs		_ Attach	ned _		Remarks Where and	
						perly iden	tified and	signed by C	Commissioned ng number):			,	,		ollowing it	tems of			
_									N	A									
	emarks I, Impact	test ex	kempt	ed per	UHA-	51(d)(e)(	h).												
2	PWHT	are ex	empte	ed by L	HA-3	2.		at site by	liser										
								ached For											
									tube sheet he CK 3510,2 p		ngers	S.							
									hell,the other		to the	e shell.							
										Chent	he	ngm	ng .		7:	MAJAT	1 Wo	7	
										2021	- 12	2.2	2		174	reinh	er 21	7 -, wi	

pecamber 22, w2

Date

Signed

(National Board Authorized Inspector Commission number)

				FORM U-1				Page <u>3</u>	of _	3
Manufactured by			Wuxi Zhicho	ang Pinchomical F	nainoorina Eau	inmont Co. I	t d			
Manufactured by Manufacturer's Seria	al No.	WZA21-22	CRN	eng Biochemical Ei NA	igineening Equ	National Boa			152	
						_ National Boo			102	
We certify that	the statements	in this repor	CERTIFIC	ATE OF SHOP CO		erial, constru	uction, ai	nd workma	nship of	this vess
		RESSURE VES	SSEL CODE, Section \	VIII, Division 1.						
U Certificate of Auth	horization Number		36,922	Expires	Sept. 21, 20	022				
Date 2011.	12. 22	Name -	Equip	Biochemical Enginement Co., Ltd.  Janufacturer)	ering	Signed C	herrh	Represen	jetive)	
			CERTIFIC	CATE OF SHOP IN	ISPECTION					
I, the undersign		alid commis	sion issued by the	e National Board of	of Boiler and	d Pressure V		spectors a JK	nd emplo	oyed by
or implied, conce be liable in any mar	erning the pressu	re vessel de	sion 1. By signing the scribed in this Man perty damage or a loss  Jiangan  (Authorized	ufacturer's Data R s of any kind arising for g Wang	eport. Further	rmore, neither d with this inspe issions	r the Inspection.		is/her em	nployer sha
We certify that th	ne statements in t	his renort ar	CERTIFICATE O	F FIELD ASSEME			his vosso	Loonforms	with the r	-oguiromon
			Section VIII, Division		onstruction of	i ali parts oi ti	ilis vesse	Comornis	with the r	equiremen
U Certificate of Auth	horization Number			_	Expires					
Date		Name		(Assembler)		Sign	ned	(Rep	resentative)	
			CERTIFICATE (	OF FIELD ASSEM	BLY INSPECT	ΓΙΟΝ				
I, the undersign	ed, holding a va	lid commiss	ion issued by the	National Board of	Boiler and P	ressure Vess	sel Inspe	ctors and	employed	d by
with the ASME hydrostatic test of implied concern	and to the best BOILER AND P	items of my knowl RESSURE \	edge and belief, the APSSEL CODE, Some By signing the Cribed in this Man	ne Manufacturer h ection VIII, Divis his certificate neithe ufacturer's Data	, no as constructe ion 1. The de er the Inspector Report. Furth	ot included in the dand assemescribed ves r nor his/her enermore, neither	he certification bled this sel was mployer nather the l	ate of shop i pressure v inspected nakes any w nspector n	inspection ressel in and sub rarranty, e	n, have been accordance jected to expressed co

(Authorized Inspector)

Page	1	of	2

## FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Mai	nufactured and c	ertified by	Wuxi Zhicheng B Park,B Zone Y	iochemica ′angjianTo	l Enginee wn,Xisha	n District	pment Co.,Ltd Wuxi City, Jia me and address of	angsu P	rovince 21	oad Machin 4108 Peopl	ery Equi e's Repu	pment Indublic of Ch	lustrial ina.		
2. Mai	nufactured for						Not known		urer)						
3. Loc	ation of installation	on	(Name and address of Purchaser)  Not known												
							ne and address)								
4. Typ	e	Vertic													
		(Horizontal, vertical NA		XZC21A15			or, heat exch., etc.	152		(Man		serial number !021	.)		
		(CRN)		(Drawing r			(Nati	onal Board	i number)			ar built)			
Data I															
Ite Nun						Re	marks								
Iter												,			
	ell:														
	Course(s)		Material	Thick	ness	Lo	ng. Joint (Cat. A	4)	Circum. J	loint (Cat. A,	B, & C)	Heat T	reatment		
No.	Diameter	Length	Spec./Grade or Type	Nom.	Corr.	Туре	Full, Spot, None	Eff.	Туре	Full, Spot, None	Eff.	Temp.	Time		
1	1 I.D.530mm 1500mm		SA-240 304	6mm	0mm	1	Spot	0.85	1/ Fig.UW- 13.2(j)	Spot/NA	0.85/ NA	None	NA		
2	O.D.710mm/ O.D.540mm	216mm	SA-240 304	5mm	0mm	1	Full	1	1/ 1	Spot/ Spot	0.85/ 0.85	None	NA		
3	I.D.530mm	1198mm	SA-240 304	6mm 0mm		1	1 Spot		1/ Fig.UW- 13.2(j)	Spot/NA	0.85/ NA	None	NA		
Certi	ificate of Authoriz	ation: Type	U	No		36,9	922	Expire	es	S	Sept. 21, 2022				
Date	101.12		Name				nt Co., Ltd.		Sign	ed Che	nhen	f ming			
Date	()elember ?	12, 2021	Signed	Jiangang (Authorized I	); ^/yr Wang	y Wan	Commissions			Al Commiss ard Authorized	sion No.:	14743	umber)		

Page	2	of	2
age	_	O.	~

## FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured	and cert	tified by	Wuxi Zhicheng Biochemical Engineering Equipment Co.,Ltd. No.8 Baoyuan Road Machinery Equipment Industrial Park,B Zone YangjianTown,Xishan District, Wuxi City, Jiangsu Province 214108 People's Republic of China.  (Name and address of Manufacturer)										
2. Manufactured	for _					Not kno	wn						
3. Location of ins	tallation					Not kno	own						
4. Type	(1.1	Vertic		Heat exchanger  al (Oil/steam heat exchanger W521D.1)(19-X-758)  (Tank, separator, heat exch., etc.) (Manu									
_		NA (CRN)		NXZC21A15-00 (Drawing numb	Rev.1	arator, neat exch	15 (National Bo		(Manu	t)			
Data Report													
Item													
Number					1	Remarks							
Item 19	Nozzle	es, inspection	on, and safety val	ve openings:									
Purpose		Diameter		Mate	erial	Nozzle Th	nickness	Reinforce	Attachm	ent Details	Location		
(Inlet, Outlet, Drain, etc)	(Inlet, Outlet, Drain, etc) No. or Size (mm)		Туре	Nozzle	Flange	Nom.	Corr.	ment Material	Nozzle	Flange	(Insp. Open.)		
S1 Steam inlet	1	O.D. 114.3mm	ASME B16.5- 2013 CI.150 flg. SO RF	SA-312 TP304	SA-182 F304	6.02mm	0mm	SA-240 304	Fig.UW- 16.1(e)	Fig. UW- 21(1)	NA		
S2 Condensate outlet	1	O.D. 114.3mm	ASME B16.5- 2013 CI.150 flg.	SA-312 TP304	SA-182 F304	6.02mm	0mm	SA-240 304	Fig.UW- 16.1(e)	Fig. UW- 21(1)	NA		
S3 Shell side vent	1	O.D. 21.3mm	ASME B16.5- 2013 CI.150 flg. SO RF	SA-312 TP304	SA-182 F304	2.77mm	0mm	Integral	Fig.UW- 16.1(c)	Fig. UW- 21(1)	NA		
T1 Product 1+BE inlet	1	O.D. 168.3mm	ASME B16.5- 2013 CI.150 flg. SO RF	SA-312 SA-182 TP304 F304		7.11mm	0mm	SA-240 304	Fig.UW- 16.1(e)	Fig. UW- 21(1)	NA		
T2 Product 1+BE outlet	1	O.D. 168.3mm	ASME B16.5- 2013 CI.150 flg. SO RF	SA-312 TP304	SA-182 F304	7.11mm	0mm	SA-240 304	Fig.UW- 16.1(e)	Fig. UW- 21(1)	NA		
V1/V2 Tube side vent	2	O.D. 21.3mm	ASME B16.5- 2013 CI.150 flg. SO RF	SA-312 TP304	SA-182 F304	2.77mm	0mm	Integral	Fig.UW- 16.1(c)	Fig. UW- 21(1)	NA		
D1/D2 Tube side drain	2		ASME B16.5- 2013 CI.150 flg. SO RF	SA-312 TP304	SA-182 F304	3.38mm	0mm	Integral	Fig.UW- 16.1(c)	Fig. UW- 21(1)	NA		
Certificate of Aut	horizatio	on: Type	U	No.	36	,922	Expi	res	Se	pt. 21, 2022			
Date 2821.	. 12.	22	Name	Wuxi Zhicher Engineering E		o., Ltd.		Signe 	ed Char	(Representat	tive)		
Date December 21, 22			Signed	Jiangang Wa	ng	Commissions Al Commission No.: 14743  (National Board Authorized Inspector Commission num							

## FORM U-5 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET SHELL-AND-TUBE HEAT EXCHANGERS

As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manı	ufactured an	d certified	by Wuxi Z Parl	Zhicheng B k,B Zone Y	iochemical ′angjianTow	n,Xishan Distri	uipment Co.,L ct, Wuxi City, ,	Jiangsu Provi	yuan Road Ma nce 214108 P	ichinery Equ eople's Rep	uipment Industrial oublic of China.
2. Manı	ufactured fo	r				(Name	Not know and address of Pur				
3. Loca	ition of insta	llation				(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Not know				
4.Type		Vertic				WZA	NA				
		rizontal, vertica					's serial number)			(CRN 202	
		1A15-00 F Drawing numb					Soard number)			(Year b	
				F	IXED TUBES	SHEET HEAT EX	CHANGERS				
		Des	ign/Operating F	ressure Ra	nges	De	sign/Operating N	/letal Temperatu	ıres	Allowable A	
	Name of Shell Side		Il Side Tube		Side	Shell	Channel	Tubes	Tubesheet	Differential Expansion	
001		Min.	Max.	Min.	Max.					Min.	Max.
		(MPa)	(MPa)	(MPa)	(MPa)	(°C)	(°C)	(°C)	(°C)	(mm)	(mm)
	esign	-0.1	1.2	-0.1	1.2	-10/220	-10/220	-10/220	-10/220	0	0
Оре	erating	/	0.8	/	0.62	175.5/170.5	78/90	78/90	175.5/170.5	0	0
D	ata Report										
Ite	em Number						Remarks				
	22						Remarks 4	4			
Certifica	te of Author	ization: T	Гуре	U	No.	36	5,922	Expires		Sept. 21	, 2022
					\/\/\/\/\/\/\/\/\	cheng Biochem	ical				
Date	2-21-12	2.22	Name			g Equipment C			Signed	Kenzh	engune
_			,			(Manufactur			_	(Re	epresentative)
D-1	December	22, 7	المص	-1	)i·	myny Wang			Al Com	mission No.:	14743
Date			Signe		Jiangang (Authorized Ins		Commissi				Commission number)
					,			(,,,,,			,