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	anufactured	and ce	rtified by _					nan Distr	quipment Co ict, Wuxi Cit Name and addre	y, Jiangsu	Provinc					
2. N	anufactured	for _							Not know	n						
3. L	ocation of ins	stallatio	n					(Name	and address of Not kno							
									(Name and ac							
4. T	уре	(1	Vertion Vertion Vertion			(Oil	/steam he	eat exch	exchanger anger W521 kt. vessel, heat	D.2)(19-X	(-858)		WZ (Manufacture	A21-2		
		NA		ai, or oprioro,		ZC21A16	6-00 Rev		iki. Voodol, Hode	153	3		(Marialaotai t	202		
_		(CRN				(Drawing r	number)		(National Boa	rd number)			(Year b	uilt)	
5. A	SME Code,	Section	VIII, Div. 1	[Edition a	2019 Ed nd Addenda, it		(date)]		(Code Cas				Special serv	NA ice per l	JG-120(d)1	
				r single wa		ackets of		vessels,	shell of heat	exchange	rs, or cha		ichamber	vessels		
6. S	. ,		r of course(s)			3			(b) Overall				2914mm			
$\overline{}$		ırse(s)			erial 'Grade		kness		ong. Joint (Ca Full, Spot			n. Joint (Cat. A	1		eat Treatm	
No.	Diamete	r	Length		уре	Nom.	Corr.	Туре	None	' Eff.	Туре	None	Eff.	Ter	np.	Time
	See attach	ned														
1	form U-4 p	age														
+	1 of 2															
							Body	Flanges	on Shells							
	_			Flange	Min Hub			How					olting			
No.	Туре	ID	OD	Thk	Thk	Materi	al I	tached	Location	Num & S	Size	Bolting Material	Wash (OD, ID,		Wash Mate	
NA																
7. H	eads: (a)				NA				(b)				NA			
	1			spec. number	grade or type	e) (H. I. — ti	ime and tem	ıp.)	T	1 (1		c. number, grad	e or type) (H			0.)
	Location (Top, Bottom,	N	Thickness In Corr	. Crow	Radius n Knuckl	Ellipt e Rat	ical /	onical Apex Angle	Hemispherica Radius	Flat Diameter		to Pressure Concav	е Туре	F	egory A Full, Spot, None	Eff.
(2)	Ends)					-		- Tigic							None	
(a)	INA						Body	Flanges o	n Heads							
					Flange	Min H	ub		How				olting			
	Location	Ту	pe ID	OD	Thk	Thk		aterial	Attached	Num & S	Size	Bolting Material	Wash (OD, ID,		Wasi Mate	
(a)	NA															
8. T	ype of jacke				NA				Jacket closur	e		(Describe as o	NA	d bor o	to \	
lf	bar, give dir	nension	ns; if bolted, d	escribe or s	ketch					1	NA	(Describe as o	igee and wei	u, bar, e	C.)	
9. N	IAWP	1.2MF		0.1M		t max. tem	· I- ·	20℃	220°		. design m	etal temp.	-10℃	a	t 1.2	MPa
10.	Impact test	(Interna	al)	(Exter		Per UHA	ا) (51(d)(e)-	nternal)	(Extern	nal)		at test temper	ature of		NA	
		or co	mb. test pres		dicate yes or n					oof test			NA			
			completed for			31 at 1.0	Jivii a (11	Onzonia	<u>')</u>	oor test			INA			
			•													
40	T. b b		SA-240 3		6	40mm/6			40mm/40n		0,000,000 (0,000		10/6	ldod ()	Molded	
12.	Tubesheet	[Stat	(Top & Bot tionary (material		[Dian	(O.D neter (subje	ct to press.)] -	(Nomina (Nominal thickr		(Corr. allo				Nelded ded or bolted	d)]
		[Flo	NA pating (material	spec. no.)]		NA (Diamet			NA (Nominal thick	ness)	NA (Corr. allo	DW.)		NA (Attachr		
13.	Tubes	S	A-213 TP30)4L		19.05r	nm		1.65mm	1	336 p	cs		ht (L=	3000mm))
		(Materia	al spec. no., gra	de or type)		(O.D.	ch.	enri	(Nominal thickr	ness)	(Numbe	,			ght or U)]	
								2-21	lengmi			1; ~	wher 27		2.1	
												Deles	nher 27	l,	10 J	

FORM U-1

									FORW	0-1					Page	e		OT	3
Manu	actured by								ng Biochem										
Manu	acturer's Se	erial No		W	ZA21-2	3	C	CRN		NA		Nati	onal Boa	ard No.			153		
Item	s 14–18 inc	I. to be	comple	ted for in	nner cha	mbers	of jacke	ted vesse	els or channe	els of heat e	excha	ngers.							
14. S	hell: (a)	Numb	er of cou	ırse(s)		1/1	1 (Top/E	Bottom)		(b) Over	all len	ngth		427m	m/427m	nm (To	p/Bott	om)	
	Cour	se(s)		_	Material		Thick	kness	-	Joint (Cat.	A)	Circ	um. Join	t (Cat.	A, B & C)	Не	at Treatm	ent
No.	Diamete	er	Length	S	pec./Grad or Type	de	Nom.	Corr.	Туре	Full, Spot, None	Eff.	тур.	е	Full, S Non		Ξff.	Tem	р	Time
	I.D.		407				0	0			0.01	1/Man.	App.2		(0.85/	NI A		NIA.
1	530mn	n	427mm	5.	A-240 30	14	6mm	0mm	1	Spot	0.85	Fig. 2-	4(8)	Spot	/NA	NA	NA		NA
2	I.D.		427mm	S	A-240 30)4	6mm	0mm	1	Spot	0.85			Spot	/NA	0.85/	NA		NA
	530mn	n										Fig. 2-	4(8)			NA			
	Т		T			N	.		Body Flanges	on Shells	_				Bolting	1			
No.	Туре	ID	OD		ange Γhk	Min Hu Thk	M di	laterial	How Attached	Location	n	Num & Size		Bolting laterial		Washe		Wasi Mate	
			0.40	T							\top		1	atoriai		.D.43.5/		Wate	iidi
1	FM	545 mm	640 mm		minal Bmm	NA		F304	Welded	Тор	Ι,	20& M16X150mm	SA	-193 B	8	17.5/T3.	.5	SA-240	304
			- "		,,,,,,			1 304			+	107 13011111	-			(mm)			
2	FM	545	640	No	minal	NA	s	A-182	Welded	Ton		20&		-193 B		.D.43.5/ 17.5/T3.		CA 240	204
2	FIVI	mm	mm	63	3mm	NA		F304	vveided	Тор		M16X150mm		-193 D	°	(mm)	.5	SA-240	3 304
15 H	leads: (a)	Tor	: SA-24	10 304	Cold for	mina I	NOT PI	NHT		()	o)	Bottom: S	A-240 3	304 (Cold for		JOT P	\/\/HT	
15.1	icaus. (a)	100						T. — time a	and temp.)	(,	٠.							e and temp).)
	Location		Thickr	ness		Radius	S	Elliptica	Conical	Homiani	acrica	Flot	Side	e to Pre	ssure		Са	tegory A	
	(Top, Bottom,		Min.	Corr.	Cro	wn K	nuckle	Elliptical Ratio	Apex Angle	Hemispl Radi		Il Flat Diameter	Conve	ex C	oncave	Туре	e F	ull, Spot, None	Eff.
	Ends)	+			R 5	30	R 53		-					_		-	_		-
(a)	Тор		7mm	0mm	1111		mm R 53	NA	NA	NA	١	NA	No		Yes	S	_	Full	0.85
(b)	Bottom	Bottom 7mm 0mm R 530 R 53 NA						NA	NA	NA NA	١	NA	No		Yes	S		Full	0.85
	Body Flanges on Heads																		
	Location	Ту	ре	ID	OD		ange hk	Min Hub	Material	How Attache		Num & Size		Bolting	Bolting	Washe		Was	
						+		Thk			+		N	/laterial	((DD, ID, 1	thk)	Mate	erial
(a)	NA																		
16. N	MAWP	1.2N			0.1 (Externa	al)	at max	k. temp.	220°C (Internal)		220°C Externa		lesign m	etal ter	np	-10°C	at	1.2	2MPa
17. l	mpact test	(IIItell	iai)		(Extern		o. Per l	UHA-51((1	EXTERNI	ai)	at	test ter	nperatur	e of		NA	
						cate yes	or <i>no</i> and	the compo	nent(s) impact t						.,	_			
	lydro., pneu						Test at	t 1.69MF	Pa (Horizont	al)	Proo	of test				NA			
19. N	lozzles, insp	pection	, and safe	ety valve	openings	S:													
	rpose t, Outlet,	No.	Diamet		Туре			Materia	al	Nozzle	Thickn	Rei	nforceme	ent	Attac	hment	Details		cation (Insp.
	in, etc.)		Size	е			Noz	zle	Flange	Nom.	(Corr.	Material		Nozzle	е	Flang	je C	open.)
See	attached																		
	rm U-4																		
pag	e 2 of 2																		
20. S	upports: Sk	cirt _	NA (Yes or r		ugs	4 lumber)	Le	gs	NA Oth	ers	7	Lifting lugs (Describe)		A	ttached			marks 7 ere and how	
21. N	/lanufacture	r's Part	,	,	,	,	d and sig		ommissioned	Inspectors I				follow	ing items	of the r	,		,
(ist the name	e of par	t, item nu	umber, M	lanufactu	rer's na	me, and	identifying											
_									N	IA									
	Remarks 1, Impact t	est ex	empted	per UH	A-51(d)	(e)(h).													
	2, PWHT a	are exe	empted	by UHA	-32.		otom -1	nito b	loor										
	3, The safe 4, For eac																		
	5, UG-46(a	a)" w	hen insp	pection of	opening	s are o	mitted i	in fixed to	ube sheet h		ngers	S.							
		nnei fla	ange ga	skets:0	ו/1/1.ט.				CK 3510,2 p		to the	a chall							
	7,4 Lifting		elded to	o the To	p head	and bo	ttom ch	iaiiiiei Sii	ien, the othe	13 Welded	to the	e Sileli.							
			elded to	o the To	p head	and bo	ttom ch	iaiiilei Sii		4		_			7:4	yrM	W	7	
			velded to	o the To	p head	and bo	ttom cn	iaiiilei Sii		henrh		_)ia	y 7	W	7 21	

		FORM U	J-1		Page 3	of	3
Manufactured by		Wuxi Zhicheng Biochemic		nt Co., Ltd.			
Manufacturer's Serial No.	WZA21-23	CRN	NA Nat	ional Board No.	1	53	
		CERTIFICATE OF SHO	P COMPLIANCE				
We certify that the statement conform to the ASME BOILER AND			ls of design, material,	construction,	and workmans	hip of this	vessel
U Certificate of Authorization Number	er36,92	22 Expi	res Sept. 21, 2022	_			
Date 201. 12. 2V	Name Wu	uxi Zhicheng Biochemical E Equipment Co., Ltd. (Manufacturer)	Sian	ed Chenz	Representation	ve)	
		CERTIFICATE OF SHO	OP INSPECTION				
I, the undersigned, holding a	ı valid commission i	issued by the National B	oard of Boiler and Pre	ssure Vessel	Inspectors and	employed	d by
	Verification Limited		of		UK		
have inspected the pressur							, and
state that, to the best of my kill PRESSURE VESSEL CODE, Se			·				
or implied, concerning the pres							
be liable in any manner for any pers		amage or a loss of any kind ari	sing from or connected with	this inspection.			
Date Mecember 21, 202	Signed	Jiangang Wang	Commissions	s AI	Commission No	: 14743	
		(Authorized Inspector)			rd Authorized Inspecto		number)
	CEI	RTIFICATE OF FIELD ASS	SEMBLY COMPLIANCE				
We certify that the statements i of ASME BOILER AND PRESSURE			nbly construction of all pa	arts of this ves	sel conforms wit	h the requi	rements
U Certificate of Authorization Number			Evpison				
O Certificate of Authorization Number	=1		Expires	_	•		
Date	Name	(Assembler)		Signed	(Repres	entative)	
		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			(,,		
	CE	RTIFICATE OF FIELD AS	SEMBLY INSPECTION				
I, the undersigned, holding a	valid commission is	sued by the National Boa	ard of Boiler and Pressu	ure Vessel Ins	pectors and em	iployed by	
of	have co	ompared the statements in	this Manufacturer's Dat	a Report with	the described pr	essure ves	ssel
and state that parts referred to as da					ficate of shop ins		
inspected by me and to the be with the ASME BOILER AND							
hydrostatic test of	INLUGURE VESS	. By signing this certificate				-	
implied concerning the press		d in this Manufacturer's [Data Report. Furthermo	ore, neither th	e Inspector nor		
shall be liable in any manner for any	personal injury or prope	erty damage or a loss of any kir	nd arising from or connected	with this inspect	ion.		
Date	Signed		Commissions	3			
		(Authorized Inspector)		(National Boar	d Authorized Inspecto	or Commission	number)

Page	1	of	2	
Page		OT	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. Mar	nufactured and c	ertified by	Wuxi Zhicheng B Park,B Zone Y	iochemica ′angjianTo	ll Enginee wn,Xisha	n District	pment Co.,Lto , Wuxi City, Ji me and address o	angsu P	rovince 214	oad Machin I108 Peopl	ery Equi e's Repu	pment Ind	ustrial ina.	
2. Mar	nufactured for						Not known							
3. Loc	ation of installation	on	(Name and address of Purchaser) Not known											
			Name and address)											
4. Typ	e	Vertic		Heat exchanger I (Oil/steam heat exchanger W521D.2)(19-X-858)								1-23		
		(Horizontal, vertic		V7001A16			or, heat exch., etc			(Man		serial number	.)	
	-	(CRN)		XZC21A16 (Drawing i		.1	(Nat	153 ional Board	I number)	-		ar built)		
Data F	Report													
Ite														
Nun	nber					Re	marks							
Iter														
Sh	ell:													
	Course(s)		Material	Thick	kness	Lo	ong. Joint (Cat. /	A)	Circum. J	oint (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	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	Spot		1/ Fig.UW- 13.2(j)	Spot/NA	0.85/ NA	None	NA	
Certi	ficate of Authoriz	zation: Type	U	No)	36,9	922	Expir	es	S	Sept. 21,	2022		
Date	2021. 12	· 22	Name		Vuxi Zhicl gineering		chemical nt Co., Ltd.		Signe	ed Cher	urhei	ym	y	
Date	pecenter	١٢, ٢٢	Signed		(M) Wang	anufacturer)				Al Commiss			umber)	

Page	2	of	2
Page	_	01	

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 cer	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 known (Name and address of Purchaser)										
3. Location of ins	stallation		Not known Name and address)										
4. Type		Vertic											
	(F	lorizontal, vertic		VXZC21A16-00		arator, heat exch	n., etc.)	3	(Manı	ufacturer's serial n 2021	umber)		
_		(CRN)		(Drawing numb			(National Bo			(Year built)		
Data Report													
Item													
Number						Remarks							
Item 19	Nozzle	es, inspectio	on, and safety valv	e openings:									
Purpose		Diameter		Mate	erial	Nozzle Th	nickness	Reinforce	Attachm	ent Details	Location		
(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.	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	SO RF 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		
S3 Shell side vent	1	O.D. 21.3mm	ASME B16.5- 2013 Cl.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 TP304	SA-182 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	O.D. 33.4mm	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 2021 -	12.	22 2, 22	Name	Wuxi Zhicher Engineering E	•	o., Ltd.				Meny M	ive)		
Date Delem		, -	Signed	Jiangang Wa		Commiss	sions			n No.: 14743	on number)		

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. Manufactu	red and certified		Zhicheng E k,B Zone \	Biochemical YangjianTov	Engineering Ed vn,Xishan Distri	uipment Co.,I ct, Wuxi City,	Jiangsu Prov	ince 214108 P	achinery Equ eople's Rep	uipment Indus	strial a
2. Manufactu	red for				, , , , , , , , , , , , , , , , , , ,	Not know					
3. Location of	finstallation				(Name	Not knov					
4.Type	Vertic	cal				21-23			NA		
١٨/	(Horizontal, vertic				•	's serial number)			(CRN 202		
	(Drawing num)					Soard number)		_	(Year b		
			F	FIXED TUBES	SHEET HEAT EX	CHANGERS					
	Des	sign/Operating F	Pressure Ra	inges	De	sign/Operating N	Metal Temperat	ures	Allowable A		
Name of	Shel	I Side	Tube	e Side	Shell	Channel	Tubes	Tubesheet	Expansion		
Condition	Min.	Max.	Min.	Max.				,	Min.	Max.	
	(MPa)	(MPa)	(MPa)	(MPa)	(°C)	(°C)	(°C)	(°C)	(mm)	(mm)	
Design	-0.1	1.2	-0.1	1.2	-10/220	-10/220	-10/220	-10/220	0	0	
Operating	/	0.8	/	0.62	175.5/170.5	78/90	78/90	175.5/170.5	0	0	
Data Re	port										
Item Nur	mber					Remarks					
22						Remarks 4	4				
				No	26	022	Cyminae		Comb 24	2022	
Certificate of A	uthorization: 7	Гуре	U	No.		,922	Expires		Sept. 21,	2022	
Date 2021	. 12.22	Name			heng Biochemi g Equipment Co			Signed C	Summe	agum	
				23	(Manufacture	er)			(Re	presentative	
Date Dec	mber 22, 202	Signed	d	Jiangang (Authorized Ins	Wang	Commissi		Al Comn	nission No.:		hor)
				, williams	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		(IVa	Idi Bodi'd Addiloi	izou mapeciol (Jonnin a alon i lullil	531)