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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. M	lanufactured	and c	ertified	l by _					nan Distr	quipment Co rict, Wuxi City (Name and addre	y, Jiangsu	Province					
2. M	lanufactured	for								Not know	n	,					
2 1	agation of inc	atallati							(Name	and address of Not kno							
3. L	ocation of ins	stallati	on _							(Name and ac							
4. T	vne			Vertic	al		(Oil	/steam h		exchanger anger W521	C 2)(19-X	-859)		WZ	A21-2)1	
7. 1			(Horizo		al, or sphere)		(011			jkt. vessel, heat		000)		(Manufacture			
_		(CF				WX	ZC21A14 (Drawing)	4-00 Rev	v.1		151 National Boar				202 (Year b		
5. A	SME Code,	,	,	Div. 1		2019 Ed	, ,	namber y		N.		a nambor)			NA	diri	
						nd Addenda, i	if applicable	, , , , ,		(Code Cas	e number)			[Special serv	ice per		
					single wa	II vessels, j		f jacketed	vessels,	shell of heat		s, or chan	ber of mult			s.	
6. S	(-,			ourse(s)			3			(b) Overall				1914mm	_		
I.		ırse(s				erial /Grade		kness		ong. Joint (Car Full, Spot			Joint (Cat. /	t I		Heat Treatm	
No.	Diamete		Le	ngth	or T	уре	Nom.	Corr.	Туре	None	' Eff.	Туре	None	Eff.	le	mp.	Time
,	See attach																
1	form U-4 p	age															
\top																	
					FI	NAI- III-I			Flanges	on Shells			В	olting			
No.	Туре	ID		OD	Flange Thk	Min Hub Thk	Materi	al I	How tached	Location	Num & S	ize	Bolting Material	Wash		Wash Mate	
NA													Widterful	(00, 10,	unk)	Water	Tidi
7. H	eads: (a)					NA				(b)				NA			
				`	pec. number	, grade or type	e) (H.T. — t	ime and tem	ıp.)		(N	· ·	. number, grad				.)
	Location (Top,	-	Thic	kness		Radius	— Ellipt	ical I	onical	Hemispherica	al Flat	Side	to Pressure			itegory A	$\overline{}$
	Bottom, Ends)		Min.	Corr.	Crowi	n Knucki	le Rat	I OII	Apex Angle	Radius	Diameter	Conve	Concav	/е Туре	•	Full, Spot, None	Eff.
(a)	NA																
								Body	Flanges o	on Heads							
	Location	Т Т	уре	ID	OD	Flange Thk	Min H		aterial	How Attached	Num & S		Bolting	olting Wash	er	Wash	her
		-				THE	TIIK			Attached	Nulli & S	lize	Material	(OD, ID,	thk)	Mate	rial
(a)	NA																
8. T	ype of jacket	t _				NA				Jacket closure	е		(Describe as	NA	d har e	etc)	
lf	bar, give dir	nensio	ons; if b	oolted, de	scribe or s	ketch					N	IΑ	(Deconibe do (ogee and wen	u, bui, c		
9. N	IAWP	1.2N			0.1M (Exter		t max. ten	. [220°C nternal)	220°		design me	etal temp.	10℃	6	at1.2	2МРа
10.	Impact test							-51(d)(e)				a	t test tempe	rature of _		NA	
4.4	Lloudan					dicate yes or r			,					A14			
	Hydro., pneเ กร 12 and 13					Hydro. Te	est at 1.6	эмра (н	orizonta	1) Pro	oof test _			NA_			
nen	is iz aliu is	5 10 10	e comp	netea ioi	tube sect	ions.											
				A-240 34		6	620mm/6			40mm/40n							
12.	Tubesheet	[St		p & Botte (material s		[Dian	(O.D neter (subje	ct to press.)		(Nominal thickr		Omm/Om (Corr. allov				Welded Ided or bolted	d)]
				NA			NA			NA		NA			N/	Α	
16		[F		(material sp			(Diamet	,		(Nominal thickr	,	(Corr. allov			(Attach		
13.	Tubes	(Mate		13 TP30 c. no., grad		-	19.05r (O.D.			1.65mm (Nominal thickr		324 pc (Number				=2000mm) ight or U)])
								6	Chenz	henja 1.12.2	3		77	angery W	/any		
									202	1.12.2	2		7	ansing w	22.	22	
													Dea	UNIVE !	,	1	

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FORM U-1

	actured by acturer's Se	erial N	0.		WZA	A21-21				ng Bioche	mical Engin NA	eerir			Ltd. ard No.			15	1	
Items									ted vesse Bottom)	ls or chanı	nels of heat of				427mn	n/427m	m (To	n/Rot	tom)	
14. 3	Cour		Dei Oi	course(aterial	1/1 (Thick		Long	g. Joint (Cat.			cum .loir	nt (Cat. A				eat Trea	tment
No.	Diamete	T	Leng	ath	Spec	c./Grade	N	om.	Corr.	Type	Full, Spot,	Ef			Full, Sp	oot, F	ff.	Ten		Time
	I.D.	\dashv		+	or	Туре					None			App.2	None		.85/			
1	510mn	1	427r	nm	SA-	240 304	61	mm	0mm	1	Spot	0.8	85 Fig. 2		Spot/I	NA	NA	N/	Α	NA
2	I.D. 510mn	n	427r	nm	SA-	240 304	6	mm	0mm	1	Spot	0.8	85	App.2 2-4(8)	Spot/	NA	.85/ NA	N	A	NA
									E	Body Flange	s on Shells									
No.	Туре	ID	(DD	Flanç The	_	Min Hub Thk	М	aterial	How Attached	Locatio	n	Num & Size		Bolting Material		Washe D, ID,			asher aterial
1	FM	525 mm		320 mm	Nomi		NA		A-182 F304	Welded	Тор		16& M16X145mi	m SA	\-193 B8		D.43.5 7.5/T3 (mm)	3.5	SA-2	240 304
2	FM	525 mm		520 mm	Nomi		NA		A-182 F304	Welded	Тор		16& M16X145mi	n SA	A-193 B8		D.43.5	3.5	SA-2	240 304
15. H	eads: (a)	_To	p: SA				ning, NC		NHT T. — time a	nd temp.)	(b)	Bottom: (Mat		304 C			NOT F		mp.)
	Location		Th	ickness			Radius			Conic	al			Sid	e to Pres	ssure		C	ategory /	A
	(Top, Bottom, Ends)		Min.	(Corr.	Crowi	n Knu	ckle	Elliptical Ratio	Apex	Hemisp		al Flat Diameter	Conv	ex Co	oncave	Тур	e F	ull, Spo None	t, Eff.
(a)	Тор		5mm		0mm	R 510 mm	R m		NA	NA	N/	4	NA	No		Yes	S		Full	0.85
(b)	Bottom		5mm		0mm	R 510	R:		NA	NA	N/	4	NA	No		Yes	S		Full	0.85
									E	Body Flange	s on Heads									
	Location	Т	уре	ID		OD	Flang Thk		Min Hub Thk	Material	How Attache	ed	Num & Siz	2	Bolting Material	Bolting (C	Wash D, ID,			asher aterial
(a)	NA																			
16. N	IAWP		MPa ernal)	_		0.1 (External)		t max	temp.	220°C (Internal)		220° Extern		design n	netal tem	ıp	-10°	a	it C	0.8MPa
17. lr	npact test						No,	Per l	JHA-51(d)(e)(h)				a	t test tem	perature	e of _		NA	
	ydro., pneu				-	H				nent(s) impac		Pro	of test				NA			
	ozzles, insp	Jectio	ii, and	salety V	aive op	enings:					T	T1						D : :		Location
(Inle	rpose t, Outlet,	No.		meter o	r	Туре			Materia		Nozzle	I NICK	RE	inforcem Material				Detail	S	(Insp. Open.)
	in, etc.) attached							Noz	zle	Flange	Nom.	+	Corr.	- Iviatoria		Nozzle		Flan	ge	
	m U-4 e 2 of 2																			
20. S	upports: Sk	irt	(Vac	VA	Lug	s(Nu	4	Le	gs	NA Of	thers	-	7 Lifting lug	s	At	tached		R	emarks ere and h	7
	lanufacture ist the name				orts pro	perly ide	entified a		ned by Co	ommissione g number):	d Inspectors		,			ng items	of the			ow)
22 🗖	emarks										IAV									
	1, Impact t						e)(h).													
	2, PWHT a 3, The safe						ne syste	m at	site by II	ser.										
- 4	4, For eac 5, UG-46(a	h des	ign ar when i	nd oper inspect	rating of	condition enings	on, see a are omi	attacl tted i	ned Form n fixed tu	n U-5. ube sheet	heat excha	nger	S.							
										CK 3510,2 ell the oth	pcs. ers welded	to th	e shell							
	, , <u>L</u>	.ugs	., 5146				55110	011	2,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				-					LAM		
											heurho	y	1) inhy	Non	Was !		

2521. 12.22 December 22, 2021

			FORM U-1		Page3 of3
Manufactured by		Wuxi Zhiche	eng Biochemical Engineerir	na Fauinment Co. Ltd	
Manufacturer's Serial No.	WZA21-21		NA NA	National Board No.	o151
	tatements in this rep OILER AND PRESSURE V	ort are correct and t			n, and workmanship of this vessel
U Certificate of Authoriza	tion Number	36,922	Expires Sept.	. 21, 2022	
Date 201. 12.	22 Name	Equipr	Biochemical Engineering ment Co., Ltd. Manufacturer)	Signed Ches	(Representative)
		CERTIFIC	CATE OF SHOP INSPECT	ION	
have inspected the state that, to the bes PRESSURE VESSEL or implied, concerning be liable in any manner for Date We certify that the state of ASME BOILER AND FOR INCOME.	LRQA Verification Li pressure vessel de t of my knowledge an CODE, Section VIII, Dir g the pressure vessel de or any personal injury or pr L WV Signed tements in this report a PRESSURE VESSEL COD tion Number	imited escribed in this Man d belief, the Manufac vision 1. By signing th described in this Manu roperty damage or a loss Jiangang (Authorized CERTIFICATE O	of nufacturer's Data Report cturer has constructed this his certificate neither the In nufacturer's Data Report. F s of any kind arising from or cor ng Wang d Inspector) OF FIELD ASSEMBLY COR the field assembly construct 1.	is pressure vessel in acceptor nor his/her emplorement of the management of the mana	ccordance with ASME BOILER AND loyer makes any warranty, expressed Inspector nor his/her employer shall
Date	Name		(Assembler)	Signed _	(Representative)
of and state that parts referi	red to as data items to the best of my kno	ssion issued by the I	statements in this Manufac	and Pressure Vessel Ir cturer's Data Report with , not included in the ce tructed and assembled	nspectors and employed by h the described pressure vessel entificate of shop inspection, have been this pressure vessel in accordance
hydrostatic test of implied concerning t		escribed in this Man	ection VIII, Division 1. T this certificate neither the Ins nufacturer's Data Report. a loss of any kind arising from	spector nor his/her employ Furthermore, neither t	yer makes any warranty, expressed or the Inspector nor his/her employer

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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 ce	ertified by –	Wuxi Zhicheng B Park,B Zone Y	iochemica ′angjianTo	l Enginee wn,Xisha	n District.	pment Co.,Lto Wuxi City, Ji me and address of	angsu P	rovince 214	oad Machin 4108 Peopl	ery Equi e's Repu	pment Ind ablic of Ch	lustrial ina.
2. Mai	nufactured for						Not known						
3 Loc	ation of installation	n .				(Name and	address of Purch	aser)					
O. LOO	ation of motanation		Name and address)										
4. Тур		Vertice (Horizontal, vertice		(Oil	steam he	at excha	exchanger nger W521C.2 or, heat exch., etc	2)(19-X-	859)	(Manı	WZA2	1-21 serial number	r)
		NA	W.	XZC21A14	I-00 Rev			151				021	
		(CRN)	(Drawing number) (National Board						I number)		(Ye	ar built)	
Data F	Report												
	em					_							
	nber					Re	marks ————						
	m 6												
5n	ell:					I			Ι				
	Course(s)		Material	Thick	kness	Lo	ng. Joint (Cat. A	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.510mm	1300mm	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.690mm/ O.D.520mm	216mm	SA-240 304	5mm	0mm	1	Full	1	1/ 1	Spot/ Spot	0.85/ 0.85	None	NA
3	I.D.510mm	398mm	SA-240 304	6mm	0mm	1	Spot	0.85	1/ Fig.UW- 13.2(j)	Spot/NA	0.85/ NA	None	NA
Cert	ificate of Authoriz	ation: Type	U	No)	36,9	922	Expir	es	S	Sept. 21,	2022	
Date	2021. 1	2.22	Name				nt Co., Ltd.		Sign	ed Che	en She	ayy moresentative)	・ ン
Date	December	22, 2021	Signed	Jiangang (Authorized	7) Wang	Way	Commissions	·		Al Commiss ard Authorized	sion No.:	14743	umber)

	Page	2	of	2
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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 E Park,B Zone `	Biochemical Er YangjianTown,	Xishan Distr	quipment Co rict, Wuxi Cit	y, Jiangsu	Province 21	Road Machin 14108 Peopl	ery Equipmer e's Republic	nt Industrial of China.
2. Manufactured	for _					Not kno	own	acturer)			
3. Location of in:	stallation					Not kno	own				
4. Tuno						Name and addre	•				
4. Type	(H	Vertion Vertion Vertion		(Oil/ste	am heat exc	hanger W52 arator, heat exch		X-859)	(Man	WZA21-21 ufacturer's serial r	number)
_		NA (CRN)	W	/XZC21A14-00 (Drawing numb				oard number)		2021 (Year built	,
Data Report											
Item											
Number						Remarks					
Item 19	Nozzle	es, inspection	on, and safety valve	e openings:							
Purpose	N.	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 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 Cl.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 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
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 Au	thorizatio	on: Type	U	No.	36	,922	Expi	res	Se	pt. 21, 2022	
Date 2=21	- 12.	. 22	Name	Wuxi Zhicher Engineering E		o., Ltd.		Signe	ed Ches	When s) ive)
Date December	er 21	, ਅਪ	Signed	Jiangang Wa	ng way	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

		/				oopio o i top	ublic of China.
		(of Manufacturer)			
2. Manufactured for		(Name	Not know and address of Pu				
3. Location of installation		(1101110	Not knov	,			
4.Type Vertical		\\\7\	121-21	***		NA	
(Horizontal, vertical, or sphere)			's serial number)			(CRN	
WXZC21A14-00 Rev.1			51			202	
(Drawing number)		(National E	Board number)			(Year b	uilt)
	FIXED TUBES	HEET HEAT EX	CHANGERS				
Design/Operating Pressure Ra	anges	De	sign/Operating N	Metal Temperati	ures	Allowable A	
Name of Shell Side Tub	e Side	Shell	Channel	Tubes	Tubesheet	Differential Expansion	
Min. Max. Min.	Max.					Min.	Max.
(MPa) (MPa) (MPa)	(MPa)	(°C)	(°C)	(°C)	(°C)	(mm)	(mm)
Design -0.1 1.2 -0.1	0.8	-10/220	-10/220	-10/220	-10/220	0	0
Operating / 0.8 /	0.48	175.5/170.5	70/80	70/80	175.5/170.5	0	0
Data Report Item Number			Remarks				
22			Remarks	4			
ertificate of Authorization: TypeU	No.	36	,922	Expires		Sept. 21,	2022
ate 7=21.12-22 Name		heng Biochemi			Signed	henrhe	nemic
WW. 1222	Engineering	g Equipment Co			<u>U</u>		0
2.1		(Manufacture				(Re	presentative)
ate December 22, WI Signed	Jiangang \	Nang	Commissi			nission No.:	
	(Authorized Ins	pector)		(Nat	ional Board Author	ized Inspector (Commission number)