PO# 16270 Job No. 15627

If removable, bolts used (describe other fastening)

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

8"- 31 Sq. Ft. FTSX

1. N	Nanufactured an	d certified by	Perr	y Product	s Corpor	ation 25	Mt. L	aurel R	oad,	Hai	nespo	ort, N	IJ 0803	5	T	15.	15	7	5	7]
2. 1	fanufactured for	JLM	Chemi	cals Inc.,	3350 We	est 131st	Street,	Blue I	sland	l, IL	604	06	of Purcha			19	E	30	8	1
3. L	ocation of instal	ation S	Same												7	2	57		12	
4. T		izontal rt., or sphere	e) (Ta	He nk, separato	at Excha r, jkt. vesse		., etc.)	B- (Mfg's	5985 serial			cme an (CRN)		5) D-9930 (Drawii			_	5874 t'l. Bd. No		1999 ar built)
5. A	SME Code, Sec	tion VIII, Div	/. 1			3-98A							N					****		
Item	s 6 - 11 incl. to l	e complete	d for sing		n and Adde ls, jackets o			shell of h	eat exc	chang		Case cham		lti-chambe	r vess		Servic	ce per U0	3-120(d)	
6. 8	hell (a) No. of	course(s):	. 1	Ť				(b) Ov	erall le	ngth	(ft & in.	.):	4'- 11	3/4"		#	11	04	07	
	Cou	rse(s)			Material		Th	nickness		Lo	ong Joi	nt (Ca	t. A)	Circ	um, Jo	int (Cat.	A, B &	C)	leat Trea	tment
No.	No. Diameter, in. Length (ft. & in.) Spec./Grade or Type						Non		r. Ty	Type Full, Spot, None Eff. Type Full, Spot, N					Spot, No	ne E	eff. T	emp.	Time	
1	8-5/8"	/8" 4'- 11·3/4" SA-53 GrB					.277	" 0		E		Vone	85	% —		-		-   -	-	-
-		_			-		000	-	-									-	-	
7. F	7. Heads: (a) (b) (Mat'l Spec. No., Grade or Type) H.TTime & Temp (Mat'l Spec. No., Grade or Type) H.TTime & Temp																			
	Location (Top,	Thick	rness	Re	dius	Elliptical	Co	nical	Hei	misph	herical	F	lat	Side to	Pressure			Category		
$\vdash$	Bottom, Ends)	Min.	Corr.	Crown	Knuckle	Ratio	Ape	x Angle.		Rad	lius	Dian	neter	Convex	Co	ncave	Type	Full, Spo	t, None	Eff.
(a)								netra .				_	****			-		•		
(b)		-							-				_			-			-	******
	8. Type of jacket																			
10.		ternal)	(exter	nal) ragraphs	UG-20 (1	(inte	ernal) 66(a) a	nd UH					s <sup>2</sup>			20	_		150	
				225		,	,	or no and	he cor	mpon	ent(s) i	impact	t tested)						5	
	Hydro., pneu., o ns 12 and 13 to					. P	roof test													
	Tubesheet:		240 Tp			8-5/8	8"				1"			0				W	elded	
	_	Stationary			Dia.,	in. (subjec		s.)		Non	n. thk.,	in.		Corr. Allo			Attac	hment (v		bolted)
		lg. SA-10				3"			50#				0			Reta		l by tub	esheet	
	Floating (Mat		•		Dia	a., in.		Nom.	thk., ir				Corr. Allov				Atta	chment		
13.7		SA-249 Spec. No., G				3/4"					GA.			32		- · -			aight	
lton	mar : ns 14 - 18 incl. t	••••••••				O.D., in.	or channe				n. or ga	auge		Numl	er			Type (St	raignt or	U)
	Shell (a) No. of			ilei Gilailibei	s or jackete	W 703013 (				-	(ft & in	.):	2 @, 6"					-		
	Cor	ırse(s)	1		Material			Thick	ness		-	Long J	Joint (Cat.	A)	Circ	um, Joint	(Cat.	A, B & C)	Heat T	eatment
No.	Diameter, in.	Length (ft. 8	k in.)	Spec	/Grade or	Туре		Nom.	C	orr.	Туре	Full, S	pot, None	Eff.	Туре	Full, Sp	ot, No	ne Eff.	Temp.	Time
2	8-5/8"	6"		SA-	312 TP30	)4		.148"	0		Е	N	Tone	85%	1	No	one	70%		-
									-	+										
15.	Heads: (a)	SA-240	Гр304						(b)	)										
		(M	at'l Spec.	No., Grade			200 Date 200	1		-			Mat'l Spec	_			ΓTime			
	Location (Top,		kness		Radius		lliptical	Conic		Hen	nisphei		Flat			le to Pressure			ategory	
100	Bottom, Ends)	Min.	Corr.	Crov	n Kn	uckle	Ratio	Apex A	ingle		Radius	S	Diamete	r Conv	ex	Concave	Typ	e Full, S		85%
(a) (b)	Ends	.0456	0		-	-	2:1	_	-		-				-	Yes	3	I	Vone	0370
(-/								-		1										

16. MAWP	15			max. temp. 320			Min. design	metal temp. 2	.0 °F a	at 15	iO psi
	inter		(external)	(internal	,						
17. Impact test	10	ei Code	paragrapus UG-	20 (f), UCS-66(a) a							
18. Hydro., preu.,	or co	mh toet nr	ess. 256		s or no and the o	omponent(s) ir	npact tested	i)			
19. Nozzles, inspe				Proof tes	St ===						
Purpose (inlet,		Diameter	Flange	Mate	erial	Mozzlo	Thickness	Deinferson	How As	Hooked	
Outlet, Drain, etc.)	No.	or Size	Type	Nozzle	Flange	Nom.	1	Reinforcement	Nozzle	ttached	Location
Inlet/Outlet	2	1"	CL150 LJ	SA-312 TP304L			Corr.	Material		Flange	(Insp.Open
	1	2"	CL150 SO		SA-105	.109"	0	enime.	d	la	
Inlet	1	1"	CL150 SO	SA-106 GrB	SA-105	.154"	0		d	3	
Outlet	2	3/4"		SA-106 GrB	SA-105	.133"	0	- According	d	3	-
Vent/Drain	-	3/4	Half Coupling	SA-182 F304	Tanana'	3000#	0	-	d	mina	
	$\vdash$										
						2					
			. :								
20. Supports: Skirt		/// N/	Lugs	Legs		thers	60 50 40		ached	***	
		(Yes or N	· ·	(No.) d and signed by Commiss	(No.)		(Describ		,	(Where and	d How)
			nber, mig's. name and	rice. UG-46(a). Fo	or noncorros	ive service		****			
				. Safety valve insta							
Omt nyaro	)=LCS	ica m ne	nizoniai position	i. Satety varve mst	aned eisewh	ere in syster	П.				
	_										
					FICATE OF						
				are correct and that all	I details of des	ign, material,	construction	on, and workmans	hip of this ve	essel confor	m to
			Vessels, Section V	III, Division 1, 4328		Franks -		12/31	,	3000	
U Certificate of	Auth	iorization i	No	4320	-	Expires		12/31		2000	
10/2	2/1	00		. D D 1 .	0			1	am	. 1	
Date 10/2	2/9	9	Name	Perry Products				Signed /5	11/22		
			·	(Manufa					(Represer	ntative)	
	, la al-		(		ICATE OF S						
I,the undersigned and employed by		ing a valid	commission issued	by The National Board of		essure Vesse					NJ
			n this Manufactures	HSB I&I C	10/22	10 99		of <u>Hartfo</u>	rd, CT	have ins	pected
tne pressure vess Manufacturer has	con	escribed i	n triis ivianuracturer	's Data Report on _	AE Code Seeti	an VIII. Disdois	and state	that, to the best of	my knowle	dge and beli	ef, the
				in accordance with ASN							
				d, concerning the press							
nor nis employer	Silali	De liable	in any manner ior a	ny personal injury or pr	roperty damage	e or a loss of	any kina a	rising from or coni	nected with t	his inspectio	on.
Date 10/2	2/0	99 Sigr	ned lah	I ( low	l	Commissio	ne 4	1811852A N.	71117		
- 10/C	1	_, o.g.		uthorized Inspector)		Commissio	-	'l Board incl. endo		to Province	and No V
									isement, Sta	ate, Province	and No.)
				CERTIFICATE OF							
			n this reportare corre	ectand that the field as	sembly constru	actionofall pa	rtsof this v	essel conforms wit	th the require	ments of AS	SME
Code, Section VII			_			ž.					
U Certificate of Au	utnoi	ization ivo	D		_ Expires _				_		
Date		Name				Sign	ed				
-				(Assembler)				(Represer	ntative)		
			C	ERTIFICATE OF FI	ELD ASSEM	IBLY INSP	ECTION				
l, the undersigned and employed by	d, ho	lding a val	lid commission issu	ed by The National Boa	ard of Boiler an	d Pressure V	essel Insp of	ectors and the Sta	ate or Provin	ce of _	
have compared th	ne st	atements	in this Manufacture	r's Data Report with the	e described pre	ssure vessel	and state	that parts referred	l to as data it	tems	
		-		cluded in the certificate							
and belief, the Ma	ınufa	cturer has		ssembled this pressure							
			a hydrostatic test					spector nor his er			
Commence of the commence of th		*		sel described in this Ma							
				roperty damage or a los				•		Simple you of	
			,,,,,	,,				ino mopoo	!!!		
Date		Signed	/ ^ ·	thorized Inancetor	Com	missions	Notil Dear	d incl. cada	4 04-4- 5	wines and h	le \
			(AL	ithorized Inspector)		(	Mar I Roal	d incl. endorsemer	ıı, State, Pro	vince and N	10.)

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PO# 24179 Job No. 17205

PORM U-2 MANUFACTURER'S PARTIAL DATA REPORT

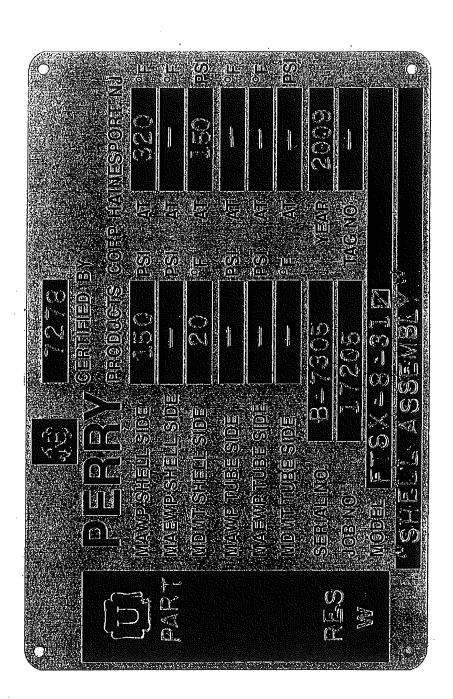
A Part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1.	Manufacture	d and certified by	Perry P	roducts (	Corporatio	n 25 M	t. Laurel				NJ 0803							
2.	Manufactured	I for Blue I	sland Pho	enol LLC	C., 3350 W	est 131s		Blue islan	ıd, Il	604								
3.	Location of In	stallation Sa	ame															
		-	eat Exch	anger Sh	ell Assemi	nlv		(Nar		d addr 7305								
4.	Туре: —	(Description of					e))	-			ial No.)	-			(CRN	)		***************************************
		7278	, , , , , , , , , , , , , , , , , , , ,	,	17205-		***	Pe			cts Corp	oratio	n			20	009	
	(Nat'l	. Bd, No.)			(Drawin		-	2 0			prepared b					(Year	built)	
	•	•	4	2007 E	dition / 20		nda		1			,,						
		Section VIII, Div.			and Addenda				-		ase No.			•	Service	per U	G-120(d	)
	ns 6 - 11 incl. Shell (a) No.	to be completed f of course(s):	or single wa	all vessels,	jackets of jac	keted vess		neat exchai verall lengt			amber of mo 4' - 10		nber ve	essels.				
_																		
	Course				aterial			kness			int (Cat. A)	-		, Joint (Cat.			Heat Tre	
	Diameter, in.	Length ft. & in.			ade or Type		Nom.	-			oot, None			ull, Spot, No		_	emp.	Time
1	8 5/8" OD	4'- 10 1/4"		SA	-53 GrB		.277"	0	Е	1	Vone	85%		088	***	rut	040	999
	2						-		+				-					
		l																
. F	-leads: (a)	(8.8 m)	Coop Mr	Crad T	\ma\ U T T'-	o C Tame		(b)			Mati Case	n No. C	Stade o	г Туре) Н.Т.	"Time 9	Temr	)	
7					ype) H.TTin			11		-1	<u> </u>	-			-111116.0			Λ
	Location (Top Bottom, Ends				adius	Elliptical	Contcal	Hemis			Flat Diameter		to Pressure				ategory	Eff.
-	BOROIN, ENGS	) Min.	Corr.	Crown	Knuckle	Ratio	Apex Angle		Radius			Conve		Concave Type				GII.
a) >)	4000	344		446	4					+	444		+				and Street Parket	
. Т	ype of jacket	20000						_ Jacket			ec. No., Gra	· ·			uld has	ata )		
												(Des	SCHOOL S	is ogee & we			edhe er	ekotob
j	If bar, give din	nensions	989			320								20	oF		scribe or 150	)
. N	MAWP	(internal)	(external)	psi at n	nax. temp. ~	(internal)		(ernal)	°F	Min	ı. dəsign me	atal tem	p.		-1-	at		_ psi.
0. 1	mpact test	No per Cod		phs UG		CS-66(a)	and UHA	A-51.										
1 }	-lvdro oneu	or comb. test pre	195	Psig(Hye	dro)	Indicate ye Proof to	es or no and	the compo	nent(s	) impa	act tested)							
em	is 12 and 13 to	be completed fo				8"			1"				0			W	/elded	
2. 7	Tubesheet:	Stationary (Mat			Dla., in. (sub		ss.)	No	m. thk	., in.		Corr. /	Allow.,	in.	Attachm	ient (v	elded or	bolted)
	Elonfin	(Mat'l Spec. No.	1		Dia.,	in		lom. thk., ir	<u> </u>	in the	Corr. Alloy	w In	_		Attachm	nent		
		SA-249 T			3/4		15		6 GA	١.	John Milon		32				aight	
3.T	ubes: —. Mat'l	Spec. No., Grade			Q.D., i			Nom. thk.,					mber		Ту		raight or	U)
em:		to be completed f		ambers of la														
	Shell (a) No. o	we						erall length		in.):					*		* 1	
			1	), A o	terial		Thick	nagg		Long	Joint (Cat.	A)	Circ	um, Joint (C	at. A. A	& C)	Heat Ti	reatment
0 1	Diameter, In.	Length ft. & in.	-		ade or Type		Nom.	Corr.	Type	7	Spot, None	1	Туре	T		Eff.	Temp.	Time
0.	Diameter, In.	readanc or in.					NOIII.	COII.	Type	i dili	opol, Hono	440						m 4 D
										1			1					
$\dashv$								***************************************										
			1						1	1		1	I					

## Form U-2 (Back)



1		(Mat	I Spec. No., G	ade or Type	H.TTime	& Temp	(b)		(Mat'l S	pec. No., Grade o			
Location (Top	,	Thick	kness	Ra	dius	Elliptical	Conical	Hemispheric	al Fla	t Side to	Pressure	Catego	1.0.
Bottom, Ends)		Min.	Corr.	Crown	Knuckle	Ratio	Apex Angle	Radius	Diam	eter Convex	Concave	Type Full, Spot	
a)	4	0110	44	***	11 til al-	8.4.	***	****	-	an wedth	4000	40 0011	
)	_							l					
removable, bolts	use	d (describe	other fastening	)		****		(Mat'l	Spec. No.,	Grade, Size, No.)			
6. MAWP			400	psi at max	temn	9 D D	N 40 40			metal temp.	444	°F at	psi.
	nter	nal)	(external)	porarma	_	(internal)	(external			,			
7. Impact test	40												
					(Inc	dicate yes o	r no and the cor	mponent(s) im	pact tested	)			
3. Hydro., pneu., o 9. Nozzles, inspec				e.	-	Proof test							
Purpose (inlet,	I			· ·	-	Material		Nozzle Th	ickness	Reinforcement	How A	Attached	Location
170 270	No.	Diameter   or Size	Flange Type	-	Nozzle	Waterial	Flange	Nom.	Corr.	Material	Nozzle		(Insp. Open
Inlet	1	2"	CL150 S	0	SA-106 G	rB	SA-105	Sch 40	0	968	d	3	aun
Outlet	1	1"	CL150 S	Ö	SA-106 G	В	SA-105	Sch 40	0	000	d	3	
								-					-
													-
	$\vdash$										+		
				_							<u> </u>		
	-							+				1	
	-												
								1					
Unit hydro-to	este	ed in hori	zontal posit	ion, Saf	ety valve	installed y others.							
Tubeside des	sign	data for	informatio	n purpos	es only: 1	AAWP:	150 psig @	320 F, MI	OMT: 20	F @ 150 ps	g		
										***************************************			
Down, Joh # 1	72	05				,							
Perry Job # 1	72	05											
Perry Job # 1	.72	05						I D COMO	IANGE				
			made in this r	anort ara	CERTIFI	CATE OI	F SHOP/FIE	LD COMP	LIANCE	workmanship	of this press	sure vessel pa	rt conform
e certify that the	e sta	atements r			correct and	CATE OI	F SHOP/FIE etails of mate	LD COMP	LIANCE ction, and	workmanship	of this press		
e certify that the	e sta	atements r r Pressure	Vessels, Se		correct and	CATE OI	F SHOP/FIE etails of mate	LD COMP rial, constru Expires	LIANCE	workmanship	of this press	sure vessel pa	
e certify that the the ASME Cod Certificate of A	e sta	atements r r Pressure prization N	Vessels, Se o.		Division 1. 4328	that all de	etails of mate	rial, constru	ction, and	12/31		2009	
e certify that the the ASME Cod Certificate of A	e sta	atements r r Pressure prization N	Vessels, Se		Division 1. 4328	that all de	etails of mate	rial, constru	ction, and	12/31	shoh a	2009 Slad	
e certify that the the ASME Cod Certificate of A	e sta	atements r r Pressure prization N	Vessels, Se o.		Division 1. 4328 Perry P	roducts (	etails of mate Corporation	rial, constru Expires	ction, and	12/31	shoh a	2009	
e certify that the the ASME Cod Certificate of Ar Date 4 じ7	e sta e fo utho	atements r r Pressure prization N	e Vessels, Se o Name	ection VIII,	Division 1. 4328 Perry P	roducts (Manufac	corporation Corporation	Expires	ction, and	12/31 gned <u>A</u>	shdh a	Slob- esentative)  Province of	NJ
e certify that the the ASME Cod Certificate of Ar  Date 4 57  the undersigned	e sta e fo utho	atements r r Pressure prization N	e Vessels, Se o Name	ection VIII,	Division 1. 4328 Perry P	roducts (Manufactional Bos	corporation Corporation	Expires	Si ECTION Vessel Ir	gned A	(Repre	Slow esentative)  Province of have insp	NJ ected the
e certify that the the ASME Cod Certificate of Ai Date 4 57	e fo utho	atements r r Pressure orization N solding a va	e Vessels, Se o.  Name  alid commiss	ion issued	Division 1. 4328 Perry P CERTII by The Na HSB	roducts (Manufactional Bose CT	Corporation cturer) DF SHOP/FI and of Boiler a	Expires  ELD INSP nd Pressure	Si ECTION Vessel In	gned A	(Repre	Slow esentative)  Province of have insponowledge and	NJ ected the belief, the
e certify that the the ASME Cod Certificate of Ar Date 4 57 the undersigned demployed by essure vessel panufacturer has	e fo e fo utho	atements r r Pressure prization N colding a value described structed tr	e Vessels, Se o.  Name  alid commiss in this Manua	ion issued	Perry P CERTII by The Na HSB Data Report	roducts (Manuface ICATE (tional Boal CT tonal Boal Boal CT)	Corporation Rurer)  OF SHOP/FI and of Boiler an Feb 06, 2	Expires  ELD INSP nd Pressure	ECTION Vessel Ir of , and sta	gned A spectors and the Hart te that, to the b By signing this	(Representation of the CT) (Representation of the CT) (Representation of the CT) (Representation of the CT)	2009 Slow esentative) Province of have insp nowledge and either the Insp	NJ ected the belief, the
e certify that the the ASME Cod Certificate of Al Date 4 07 the undersigned demployed by passure vessel panufacturer has apployer makes a	e fouthouthouth	atements represented to the structed the warranty, and the structed th	e Vessels, Se o.  Name  alid commiss in this Manualis pressure vessed or	ion issued acturer's l ressel part implied, co	Perry P CERTII by The Na HSB Data Report in accorda	roducts (Manuface FICATE Contional Board ton and and and and and and and and and an	Corporation cturer)  OF SHOP/FI and of Boiler an Feb 06, 3 SME Code, S re vessel part	ELD INSP nd Pressure 2009 ection Vill, I described in	ECTION Vessel Ir of , and sta	gned A spectors and the Hart te that, to the b By signing this ufacturer's Data	(Representation of the State of Inford, CT est of my king certificate in a Report. Fu	Slow- esentative)  Province of have insponowledge and either the Insport the I	NJ ected the bellef, the ector nor his
e certify that the the ASME Cod Certificate of Al Date 4 07 the undersigned demployed by essure vessel panufacturer has apployer makes a	e fouthouthouth	atements represented to the structed the warranty, and the structed th	e Vessels, Se o.  Name  alid commiss in this Manualis pressure vessed or	ion issued acturer's l ressel part implied, co	Perry P CERTII by The Na HSB Data Report in accorda	roducts (Manuface FICATE Contional Board ton and and and and and and and and and an	Corporation cturer)  OF SHOP/FI and of Boiler an Feb 06, 3 SME Code, S re vessel part	ELD INSP nd Pressure 2009 ection Vill, I described in	ECTION Vessel Ir of , and sta	gned A spectors and the Hart te that, to the b By signing this ufacturer's Data	(Representation of the State of Inford, CT est of my king certificate in a Report. Fu	Slow- esentative)  Province of have insponowledge and either the Insport the I	NJ ected the bellef, the ector nor his
Perry Job # I	e fo utho 2 d, he art con any	atements r r Pressure orization N olding a va described structed th warranty, a	e Vessels, Se o.  Name  alid commiss in this Manualis pressure vessed or	ion issued acturer's l ressel part implied, co	Perry P CERTII by The Na HSB Data Report in accorda	roducts (Manuface FICATE Contional Board ton and and and and and and and and and an	Corporation cturer)  OF SHOP/FI and of Boiler an Feb 06, 3 SME Code, S re vessel part	ELD INSP nd Pressure 2009 ection Vill, I described in	ECTION Vessel Ir of , and sta Division 1. this Man	gned A spectors and the Hart te that, to the b By signing this ufacturer's Data	(Representation (Representatio	esentative)  Province of have insponovledge and either the Insport intermore, needed with this	NJ ected the bellef, the ector nor his



		HEAT	EXCHA	NGER SPI	ECIFIC	ATION S	HEET T	10	5 2 d		
1	Company:JLM CHEMICA	LS INC					11	172	250		
2	Location:				*		75	74	2 6-	17 1	77
3	Service of Unit:						Our Re	ference:	the state of		ore made
4	Item No.:						Your Re	eference:			
5	Date:9-27-99		F	Rev No.:RE	V#1		Job No.	:			
6	Size 8-60		Type	BEM h	nor	Connec	ted in	1 paral	lel	1 seri	es
7	Surf/unit(eff) 3	31		Shells/unit			Surf/shell(eff)		31		ft2
8		7	PERF	ORMANCE	OF ON	NE UNIT					
9	Fluid allocation					Shell Side	9		Tube S	Side	
10	Fluid name					STE			A	MS	
11_	Fluid quantity, total			lb/h		25	51		30	042	
12	Vapor (in/out)			lb/h	2	51					
13	Liquid			lb/h			251	30	)42	304	2
14	Noncondensable			lb/h							
15	Temperature (in/out)			F		98	298	- 5	50	225	;
16	Dew point/bubble	point		F II- (GO		98	298				_
17	Density			lb/ft3		147	57.347		7.5	51.8	
18	Viscosity			ср	0.	014	0.199	0.	97	0.31	l
19	Molecular weight, vapor Molecular weight, noncon	donachlo									
20 21	Specific heat	delisable		Btu/(lb*F)	0	562	1.013	0	39	0.39	)
22	Thermal conductivity			Stu/(ft*h*F)		017	0.398		)73	0.07	
23	Latent heat			Btu/lb		08	908	0.0	313	0.07	3
24	Inlet pressure		:	psia		65			6	35	
25	Velocity	. %		ft/s		3.				.2	
26	Pressure drop, allow./calc			psi		0.3 /			2		
27	Fouling resist. (min.)		f	t2*h*F/Btu		0.00	005			002	
28	Heat exchanged	228300		Btu/h;	MTD (c	orrected)		143.1			F
29	Transfer rate, service		52	dirty	7!		clean	94		Btu/(ft2	2*h*F)
30			CONSTR	UCTION O					Ske	etch	
31	- 14 m			Shell Side		T	ube Side				
32	Design/test pressure		psig	150/			150/code				
33	Design temperature		F	32			320				
	No. passes per shell		in	0.06			0.0	— UL	<u> </u>		
35	Corrosion allowance Connections	in	in		150	-	1/150	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	. u		
36 37		out	in		150	_	1/150				
38	Sizoriating	out			100		/				
39	Tube no. 32 o	d 0.75	;thk-avg	1	0.049	in;length		5 ft;pitch		0.9375	in
40	Tube type plain					aterial	SS304		Pattern		60
41	Shell CS	id	od	8	in Si	nell cover					
42	Channel or bonnet	SS304				hannel co					
43	Tubesheet-stationary	SS	3304			ubesheet-					
44	Floating head cover						nt protection		on	oundle	
45	Baffles-cross CS		Type	sseg		ut (%d)	41 v;Sp	acing: c/c		6.0	
46	Baffles-long			Seal type	)				nlet	9	in
47	Supports-tube			U-bend	- marie	de e t. J	Typ	oe		/	
48	Bypass seal						heet joint	-	groove	/expand	
49	Expansion joint	60		Dundle ont		ype	1	Dundle	s elle	0	
50 51	Rho*V2-inlet nozzle Gaskets-shell side	69		Bundle ent	iance	Tube	ide	Bundle e	XIL	0	
52	-floating head					Tube :	JIG .				
53	Code requirements	ASME	Code Se	c VIII Div 1				TEMA cl	ass		
54	Weight/shell 466			with water		58	1	Bundle	132	)	lb
55	Remarks								, 02		7.5
56											
56											