				FO	RM U-1 MANI	JFACT	UREF	R'S D	ATA RE	EPOR1	FOR PE	RESSU	JRE \	/ESSE	LS	_				
			A	s Require	ed by the Provisi	ons of tl	he ASM	/IE Boi	ler and F	Pressure	e Vessel C	ode Ru	les, S	ection \	/III, Divi	sion 1			Page	1 of 3
1. M	anufactured a	nd certifie	d by M	ersen U	ISA-Salem B	ranch	, 540	Bran	ch Driv	ve, Sa	lem, Vir	ginia,	2415	53, US	Α					
2. M	anufactured fo	ar ARCH	CHE	VICALS	, INC., 1400	BLUE	GRAS	S LA	KE PK	WY, S	d address SUITE F	ALP	HARE		Georg	gia, 300	004, US <i>A</i>	\		
3. Lo	ocation of insta	allation A	RCH (CHEMIC	ALS, ROCH	ESTE	R PLA	NT,		KEE	ROAD, I	ROCH		ER, Ne	ew Yo	rk, 146	11, USA			
4 T.		VEDTIO					DOL V	TUDE	HEAT E	•	ne and add	dress)					000000			
4. T	ype (Horizoi	VERTICA ntal, vertica	AL I, or sph	iere)		(Tank	k, sepa	rator, j	kt. vesse	el, heat	exch., etc.)				(Manufa	S60022 acturer's se		iber)	
		N/A				T-875	5-1-D R	EV. C						43	31				2018	
_		(CRN)				(Drav	ving nu						(Nati		onal Board number) (Year built)					lt)
5. /	ASME Code, S	Section VII	II, DIV.	1	[Edition and Ac	2017/		cable	(date)]		(C	2547 ode Ca					pecial Serv	N/A	UG-120(d)1
	Items 6-11 inc	al to be co	mplete	ed for sin	-				, ,-	sels s				,	chaml	•		•	`	/1
	nell: (a) Numb			3	g.o 10000					.00.0, 0			_		0					
	Course		· · · -		— //aterial		(b) Overall length 6' 7.125" Thickness Long. Joint (Cat. A) Circum. Joint					t (Cat. Δ	R & C)	- Hoa	t Treatmer	ot I				
No.	Diameter	Leng	jth		Frade or Type	No	om.	_	Corr.	+	Full, Spot,	` /	Eff.			t, None	Eff.	Temp.		
1	34.000" ID	6' 7.1	25"		516 GR.70	0.3	75"	0.	0625"	1	NON	E	70%	**	NO	NE	70%	N/A	N.	'A
1	34.000" ID	6' 7.1			516 GR.70	0.3		-	0625"	1	NON		70%	**	NO		70%	N/A	N.	
1	34.000" ID	6' 7.1	25"	SA-	516 GR.70	0.3	75"		0625"	1	NON	E	70%	**	NO	NE	70%	N/A	N.	Α
	1	1		1		1			langes o	on Shell	S				Bol	lting				
No.	Туре	ID	OD	Flange Thk	Min Hub Thk	/laterial	Ho Attac		Locatio	n Nur	n & Size		Во	lting Ma		ang	Washer (Wasl Mate	
1	APP. II	34.000"	43.500)" 2.375"	N/A S	SA-105	FIG. 2	-4(11)	FXD EN	ID 24 -	3/4-10NC	SA-19	3 GR.I	B7 (XYI	LAN 14	24 CTD)	2". 0.812	5", 0.15"		
1	APP. II	34.000"	42 500	0" 2.750"	N/A	SA_105	EIG 2	A(11)	CI T EN	ם 28 ב	3/4_10NC	SA-10	3 CD I	D7 /YVI	AN 14	24 CTD)	2". 0.812	5" 0 15"	1424 CT C.S. (XY	
	leads: (a)	0 11000	10.000	'	N/A	<i>3</i> 1 100	11012	.(,			(b)	071 10	<u> </u>	<u> </u>		N/A	12 1 010 12	, , , , , ,	1424 CT	
				nber, grad	e or type) (H.T.		nd tem									grade or t	type) (H.T.			
	Location (Top, Bottom, Ends)	Min.	hickness	Corr.	Rac Crown		uckle		otical Co	onical A Angle	_	spherica adius		Flat ameter		Pressure Concave		Catego	ory A Spot, None	Eff.
(a)	N/A	N/A		N/A	N/A		N/A	<u> </u>	I/A	N/A		N/A		N/A	CONVOX	CONOCITO	N/A	+	N/A	N/A
(b)	N/A	N/A		N/A	N/A		V/A	-	I/A	N/A		N/A		N/A			N/A	+	N/A	N/A
			'			•	Е	Body F	langes o	n Head	s		-			!		•		
No.	Location	Туре	ID	OE) Flange Th	k I	n Hub Thk	1	Vaterial		How Attac	hed	Nur	n & Sizo	e Bol		Bolting Washe	er (OD,	Washer M	aterial
(a)	N/A N/A	Α	N/A	N/A	N/A	N/A		N/A		N/	Α				N/A	Α	N/A	thk)	N/A	
, ,	pe of jacket				N/A						et closur	e				N	/A			
lf I	oar, give dimer	nsions; if b	oolted,	describe	or sketch								N/A	([Describe	e as ogee	e & weld, b	ar, etc.)		
9. MA	WP 75	psi		N/A	at max. te	mn	3.4	0 °F			N/A	Min.	desi	gn met	al tem	р.	-20 °F	at	75 ps	
	(Inte	ernal)		(External)	· –	(Inter	nal)		(Exte	nal)	-								
10. In	npact test		NOI	NE- EXE	Indicate yes							(t) & U	JCS-6	56		at	test temp	perature	e of NO	ONE
11. Hy	dro., pneu., or co	omb. test p	ressure	HYDI	. ,		Proof te							NO	ONE					
	ems 12 and 13	to be cor	•		sections.			26.00	0"		45	250"			NI/A			СЕМЕ	NTED	
ı Z. I	ubesheet	[Statio		-PGW aterial spe	ec. no.)]	[Dia		36.00 (subje	ct to pre	ss.)]	(Nominal thickness)			(Corr. allow.)			Attach	CEMENTED Attachment (welded or bolted)		
			BS	-HLM				32.62	5"		14	.250"		N/A				CEME	ENTED	
		[Float		terial spec	c. no.)]			Diame			(Nomina		ess)	((Corr. all	ow.)			hment)	
13. T	ubes			OR 3 XBS				1.25			0.1968"(Nominal thickness)				349	or)		STRAIGHT [Type (Straight or U)]		
		(iviateria	ıı spec. I	no., grade	or type)			(O. D	.)		(INOITIII)a	LUICKI	CSS)		(Numb	C1)	[l	ype (otr	aiyiii 01 U	/J

							F	FORM U1	I								Page 2	of 3
Man	ufactured by		Mersei	ı USA	-Salem B	ranch, 540 E	Branch D	rive, Saler	n, Virgini	a, 2415	3, USA							
Man	ufacturer's S	erial	No. S 6	00226			CRN	N/A				National	Board No.	4331				
14. S	Items 14-18 Shell: (a) No			. ' .	ed for inne	er chambers o	,	<i>vessels or</i> verall lengtl	h		exchang							
		ırse(s				nterial		ickness		ong. Join			cum. Joint (C				Treatmer	nt
No.	Diameter		Lenç			ade or Type	Nom.	Corr.		Full, Spo			Full, Spot, N		Eff.	Temp.	Tir	
	N/A		N/A	4		N/A	N/A	N/A	N/A	N/A	Α Ι	N/A N/A	N/A		N/A	N/A	N/	Α
								Body Flang	es on Shell	S				Bolt	tina			
No.	Туре		ID	OD	Flange Thk	Min Hub Thk	Mai	terial	How Attached	Loca	ation	Num & Siz	e Bolti Mate	ing V	Washer (thk		Wash Mate	
N/A	N/A		N/A	N/A	N/A	N/A	N/A		N/A	N/A	N	I/A	N/A	N	N/A		N/A	
15. Heads: (a) SA-516 GR.70 (FIXED COMPRESSION PLATE) (Material spec, number, grade or type) (H.T time and temp.) (Material spec, number, grade or type) (H.T time and temp.)																		
	Location (To	<u>`</u>		hicknes		Radiu		Elliptical	Conical A	pex Hem	`		Side to Pre		-, (Categor	. ,	
	Bottom, End	ls)	Min.		Corr.	Crown	Knuckle	Ratio	Angle	F	Radius	Diamete	Convex Co	oncave	Туре	Full, Sp	ot, None	Eff.
(a)	FIXED		1.85"	(0.000"	N/A	N/A	N/A	N/A		N/A	43.5"			N/A	N	l/A	N/A
(b)	FLOATING	3	1.424"		0.000"	N/A	N/A	N/A	N/A		N/A	43.5"			N/A	N	l/A	N/A
								Body Flange	es on Head	 S								
			-		0.0		Min Hub							Bolt		(0.0.)		
No.	Location		Туре	ID	OD	Flange Thk	Thk	Mater	rial I	How Attached		Num & S	ze Bolting	e Bolting Material		al Washer (OD, Washer Ma		aterial
N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	Ą	N	I/A	N/A		N/A	N	/A	
16. MAWP 75 psi N/A at max. temp. 340 °F (Internal) Min. design metal temp20 °F at 75 psi (External) 17. Impact test NONE- EXEMPT FROM CHARPY IMPACT TESTING PER UG-20(f) & UCS-66 at test temperature of Indicate yes or no and the component(s) impact tested] 18. Hydro., pneu., or comb. test pressure Hydro. at 100 psi Proof test NONE																		
19.	Nozzles, ins	pec	tion, and	safety	valve ope	enings:												
Purpo	ose (Inlet, Outlet,	I	Diameter		Tuna		Material		Nozzle -	Thickness	Reinforce	ment	Attachmer	nt Details			Location	
	Diaiii, etc.)		OI SIZE		Туре	Nozzle		Flange	Nom.			<u> </u>	Nozzle	1	•		(Insp. Open.)	
		_	1	<u> </u>		SA-234 WPB/S		SA-105				_	UW-16.1(c)	1			SHELL	
	/ICE OUTLET	1		_	# RFSO	SA-234 WPB/S		SA-105	_	0.0625"			UW-16.1(c)	_	W-21(1)		SHELL	
SERVICE DRAIN 1 1" FULL COUPLING SA-105 3000# INHERENT FIG. UW-16.1(z-1) SHELL Additional Nozzles - See Attached U-4 20. Supports: Skirt NO Lugs O Legs O Others Others TRUNNIONS Attached FILLET WELD No Lugs O Legs O Others Others TRUNNIONS Others Others																		
Man	Manufacturer's ufacturer's nan			ports pr		nber) fied and signed b	(Number) Ny Commission	,	ors have bee	,	escribe) ed for the t	following ite	ms of the rep	oort (list th	•	here and of part, ite	,	er,
22. I	Remarks	tub	nes: 20) '														
~(~\ ~\ ~\ ~\ ~\ *;	GRAPHITE J-2(g) US /ESSEL US INSPECTIC GAFETY VA *FLANGE I	"CC ED ED N C LVE O S	DE" PI IN DES FOR ES PENING NOT I	ER UICHANGES OMPROVI	GER SHE ITTED P DED PER 1, SHEL	ER UG-46(a UG-125(a) L TO SHELL	TYPE 7	_										
4 ()-1/2" B.	C. 14	HOLES	STRA	DDLE CE HOLES	KIRT: (SA- NTER LINE STRADDLE C	x(2)12	2.625" I	.D. OPE	NINGS	w/ (1	2)7/8-9	NC X 1"	DEEP	TAPP	ED_ Form U-	1B Attac	hed

Manufactured by	lersen USA-Salem Br	anch, 540 Branch Drive, Salem, Virgini	a, 24153, USA	
Manufacturer's Serial N	No. S600226	CRN N/A	National Board No. 4331	

We cer	ify that the statements	ents in this report ar SSURE VESSEL C	CERTIFICATE OF SHO e correct and that all details of desi DDE, Section VIII, Division 1. U Ce	gn, material, construction, a	and workmanship mber 25867	o of this vessel conform to the Expires September 17, 2018					
Date	06/05/2018	Name	Mersen USA-Salem Bra	anch	Signed	farfel					
_			(Manufacturer)			(Representative)					
	CERTIFICATE OF SHOP INSPECTION										
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by											
OneCl	S Insurance Con	npany, of Lynn, M	A		•	, , ,					
have in	spected the pressu	ire vessel described	in this Manufacturer's Data Report	on June 2, 2018	, and state t	hat,					
VESSE concern	to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.										
D-4	_	C:	Q MA	Commissions							
Dat	e 06/05/2018	Signed	(Authorized Inspector)		12 d Authorized In	048, VA921 spector Commission number)					
			, ,			ispector Commission number)					
	CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE We certify that the statements made in this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. U Certificate of Authorization Number Expires										
Date_		Name			Signed	(Representative)					
			(Assembler)			(Representative)					
1 41	d : di		CERTIFICATE OF FIELD AS		! !	and ansalanced by					
i, the un	aersignea, noiain	g a valid commissi	on issued by The National Board	of Boller and Pressure ve	ssei inspectors	and employed by					
have compared the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as data items											
Dat	e	Signed	(Authorized Inspector)	Commissions (National I	Board Authorize	d Inspector Commission number)					

3070675 exe: v6.4.59

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	d cert	ified by	Mersen USA-	Salem Branch	n, 540 Branch	Drive, S	alem, V	irginia, 241 of Manufacturer	53, USA			
2. Manufactured for	AR	СН СН	EMICALS, INC.,	1400 BLUEG	RASS LAKE F	PKWY, S	UITE F,	ALPHARE chaser)	TTA, Georgia, 3	30004, USA		
3. Location of installa	ation	ARCI	H CHEMICALS,	ROCHESTER	PLANT, 100 N		ROAD, F		R, New York, 1	4611, USA		
4. Type		RTICA			BE HEAT EXC		₹			00226		
(Hori:	zontal,	vertical, o	r sphere)	(Tank,	separator, heat exch	., etc.)			(Manufacture	er's serial numbe	er)	
N/.				T-875-1-D F					4331		2018	
CR Data Re	,			(Drawing nur	nber)			(National	Board number)		(Year built)	
Item Nu	•				Remarks							
dditional Remarks:												
.D x 0.250" TH	к. э	15.3	375" LG.									
FLOATING END COMPRESSION PLATE/SKIRT: (SA-516 GR.70) 43.500" O.D. w/ (28)0.875" THRU HOLES ON A 0-1/2" B.C. HOLES STRADDLE CENTER LINE x 2.500" THKSKIRT: (SA-516 GR.70) 38.625" I.D x 0.250" HK. x 10.375" LG.												
FLANGED GLAND .625" THK.	FLANGED GLAND RING: (SA-105) 38.000" O.D. w/ (14)7/8" THRU HOLES ON A 36" B.C. x 34.625" I.D. x											
	SPLINT RING HOLDER: (SA-105) 43.500" O.D. w/ (28)0.875" THRU HOLES ON A 40.500" HOLES STRADDLE ENTER LINE x 33.875" I.D. x 2.125" THK.											
FLOATING END T ELDED BY TYPE			SKIRT: (SA-5	516 GR.70)	33.750" O.D	. ж 31	.625"	х 1.25" Т	THK. x 14.625	5" LG.		
dditional nozzles, ins	.		Salety valve oper		terial	Nozzle 1	Thickness	Dainfaraamant	Attachment D)etails	Location	
urpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Туре	Nozzle	Flange	Nom.	Corr.	Reinforcement Material	Nozzle	Flange	Location (Insp. Open.)	
SERVICE VENT	1	1"	FULL COUPLING	SA-105		3000#		INHERENT	FIG. UW-16.1(z-1)		SHELL	
Certificate of Author	orizati	ion: Tv	ре "U"	No. 5	25867			Expires S	eptember 17. 2	018		

Mersen USA-Salem Branch

(Authorized Inspector)

Signed

12048, VA921 (National Board Authorized Inspector Commission number)

Commissions

Date **06/05/2018**

Date 06/05/2018

Name

Signed

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

1. Manufactured and certified by Mersen USA-Salem Branch, 540 Branch Drive, Salem, Virginia, 24153, USA											
(Name and address of Manufacturer)											
2. Manufactured for ARCH CHEMICALS, INC., 1400 BLUEGRASS LAKE PKWY, SUITE F, ALPHARETTA, Georgia, 30004, USA											
		(Name an	d address of Purchaser)								
3. Location of installation Al	3. Location of installation ARCH CHEMICALS, ROCHESTER PLANT, 100 MCKEE ROAD, ROCHESTER, New York, 14611, USA										
_	,	,	(Name and address)	,							
4. Type VERTIC	AL Use P	OLYTUBE HEAT EXCHANG	GER Manufacturer's seri	al no S600226							
(Horizontal, ve		(Tank, vessel, heat exch., etc.)	ivianulacturer s sen	(Manufacturer's serial number)							
CRN no. N/A	Dwg no	T-875-1-D REV. C		331 Year built 2018 oard number)							
(0.11)		(Draining trainings)	(riduorial 2)								
5. ASME Code, Section VIII,	Div. 1 edition/addenda	2017/ N/A	Code Cas								
		[Edition and Addenda	ı (date)]	(Code Case Number)							
6. Graphite components:											
o. Graprille components.	1										
Item	Material Designation	Compressive Strength	Tensile Strength	CMTR No.							
TUBESHEET	BS-HLM	16,242.30 PSI (111.99 MPa)	2,277.80 PSI (15.70 MPa)	Q2-18-HLM_222177							
TUBESHEET	BS-PGW	20,831.52 PSI (143.63 MPa)	2,318.86 PSI (16.09 MPa)	Q2-18-PGW_222177							
HEADS	BS-PGW	20,831.52 PSI (143.63 MPa)	2,318.86 PSI (16.09 MPa)	Q2-18-PGW_222177							
NOZZLES	XBS-2890	24,892.00 PSI (171.62 MPa)	3,939.80 PSI (27.16 MPa)	Q2-18-2890_222177							
TUBES	GRAPHILOR 3 XBS T1										
Certificate of Authorization:	Certificate of Authorization: Type "U" No. 25867 Expires September 17, 2018										
Date 06/05/2018 Name Mersen USA-Salem Branch Signed											
				0							
Date 06/05/2018 Sign	ed Sau (A.S	Commissions	12048. VA921							
			(National Board A	Authorized Inspector Commission Number)							

(07/13)