# 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.	Manufact	nufactured and certified bySchrader Apparatebau GmbH, Schleebergstrasse 12, Ennigerloh 59320, Germany														
2.	Manufact	ured fo	r			Evonik [	Degussa C	Corporation	me and addr , PO Box address of I	868, US-T		AL 3659	0			
2			U - <b>4</b>			Evonik C	Corporation	ı, Mobile, 4			, US-The	eodore Al	36582			
3.	Location (	or insta	lation						Name and a	ddress)			100	15-01		
4.	Туре	_	(Horizon	Vertical tal, vertical, or	sphere)		(Tank, sepa	Heat exch		h, etc.)		(	Manufacture		iumber)	_
		n.a.	(110112011	iai, voitidai, oi		214-0451-10-0		· -	,			6			2015	
		CRN)	_			(Drawing no				_	(Nation	al Board nu	mber)		(Year bu	ilt)
Б	ASME Co	do Soc	tion VI	II, Div. 1 _		Edition 2013				n.a.				n.a		
					(Edition and	Addenda, if appli				Case numbe					er UG-120(d)]	
				leted for si course(s) _		ressels, jacke 2						rs, or cha 2895	amber of	multich	namber ve —	essels.
-		Course		- 1		Material	1	Thickness		Long. Joint	(Cat. A)	Circum.	Joint (Cat. A	, B & C)	Heat Treat	ment
No.	Diar	neter		Length		Grade or Type	No			Euil Ca	ot, c#	Туре	Full, Spot,		Temp.	Time
1		711,2	+	895		240 316L	8	_	_	spo		1	spot	0.85	n,a.	n.a.
2	_	711,2		2000		240 316L	8	0	1	spo	0.85	1	spot	0.85	n.a.	n.a.
							Body Flang	jes on Shells								
													Bolting			
No.	Туре	ID.	OD	Flange Thk	Min Hub Thk	Material	Ho	w Attached	Location	Num & S	ze Bolt	ing Materia	l (OD,	asher . ID, thk)	Washer	Material
1110																
		-											1			-
7.	Heads: (a	n.a.	(Ma	terial spec. nur	mber, grade or	type) (H.T. — tim	e and temp.)		(b)	(Materia	al spec, nui	mber, grade	or type) (H.	T. — time	and temp)	
	Location (	Ton T	Th	ickness		Radius	Elliptical	Conical	Hemis.	FI	at L	Side to P	ressure		Category A	
	Bottom, E		Min,	Corr	Crown	Knuckle	Ratio	Apex Angle		Diam		Convex	Concave	Туре	Full, Spot, None	Eff.
(a)	n.a.															
(b)																
							Body Fl	anges on He	ods							
		1								-	_		Bolting	Washer	-	
	Location	Туре	- 11	OD	Flange Thk	Min Hub Thk	Materia	Ho:	w Attached	Num & S	ize Bo	Iting Mater		D, ID, thk)	Washer	r Materia
(a)	n <sub>i</sub> a <sub>i</sub>														-	
(b)																
8.	Type of ja	cket			n.a.			Jac	ket closui	е			n.a.			
	,							n.a.				(Describe a	s ogee and		etc.) scribe or	akatah
	If bar, giv													nteu, ae	5,2 b	
9.	MAWP -	5,2 ba		1 bar (External)	at max. te	пр. —	00 °C	200 °C (External)	Min.	design m	etal tem	ip. ——	-29 °C	at	5,2 0	ai
10.	Impact te		''	(LAternal)		xempted as p	er UHA-51	(d)			_ at tes	t tempe	rature of		n.a.	_
11	Hydro 5	neu o	roomh	. test press	,	hydro.: 9,9	and the same of	Proof t	est				n.a.			
				. test press pleted for t												
				40 316L	une section	835,0			48			0			welded	
12.	Tubeshee	t(Stat		aterial specin	ol] [Diar	neter (subject to	press.)]	(Nomi	nal thickness	)		orr. allow.)		[Attachme	ent (welded o	r bolted
				n.a.	. 11	n.a.			thickness)			.a.		14	n.a. ttachment)	
12	Tubos		ating (ma 213 TP	aterial specano 316L	0.71	(Diameter) 63,5		(Nomina 2,				61			straight	
ıJ.	Tubes			rade or type)		(O.D.)									straight or	

National Board Number:	11	6	
Mfr. Representative:	bles	Date: Dez 16 701	5
Authorized Inspector:	J Ly	Date: DE 2 16.20	2/5

#### FORM U-1 (Cont'd)

Items 14–18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

		Course(s)				Material		Thick	ness		Long.	Joint (Cat	. A)	Circum Jo	int (Cat. A	, B & C)	Heat Treat	ment
No.	Dia	meter	Le	ngth	Spec	/Grade or Type		Nom.	Corr	r. Ty	pe F	ull, Spot, None	Eff.	Туре	Full, Spot, None	Eff.	Temp	Time
1	_	712,7	_	19		A-240 316L		8	0			Spot	0.85	1	Spot	0.85	n,a,	n,a
2		712,7	4	50		N-240 316L		8	0		1	Spot	0.85	1	Spot	0,85	n.a.	n.a
3		7 / OD406,4	26	5,6	SA	A-240 316L		В	0		1	Spot	0.85	1	Spot	0.85	n.a.	n.a.
							Body Fla	inges on S	Shells									
							Ť								Bolting		_	
No.	Туре	ID	OD	Flange Thk	Min Hub Th	k Material		How Attac	hed	Location	Nur	n & Size	Bolting	Material		asher ID, thk)	Washer I	Vlateria
1	WN	696,7	712,7	95,2	8	SA-182 F3	16L	welded	t	Bottom	40	- 3/4"	SA-	193 B7	38 ,	20,2	Staintes	s Stee
2	WN	696,7	712,7	95,2	8	SA-182 F3	16L	welded	t	Тор	40	) - 3/4"	SA-	193 B7	38 ,	20 , 2	Stainles	s Stee
5. F	leads: (a	a)			SA-240	316L		_	(	b)				n.				
		,	(Materi	al spec. num	ber, grade, o	or type) (H.T. — tin	ne and terr	np.)			(1	Vlaterial sp	ec. num	per, grade,	or type) (H	I,T. — time	and temp.)	
	Location	(Top,	Thick	ness		Radius	Elliptic	al Cor	nical	Hemis	i.	Flat		Side to Pre	ssure	3	Category A	
	Bottom, E		/lin.	Corr.	Crowi	n Knuckle	Ratio	Apex	Angle	Radiu	s	Diameter	Co	nvex	Concave	Туре	Full, Spot, None	
(a)	Top		8,0	0	712,	7 71,3	n.a.	n	.a	n,a.	_	n.a.	,	'es	Yes	1	Spot	0.85
(b)									_				1					
							Body	Flanges o	n Head	dş	_				6.11			
											-		1		Bolting	Vasher	_	
-	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Mater	rial	How	Attached	Nur	n & Size	Boltin	g Material	(OD	(D, thk)	Washer	Materia
(a)		-		-							-	_	-				-	
(b)						200.0		000.90			_			-29	°C		3,1 bar	
	IAWP _	3,1 bar		bar a	t max. ter	mp. 200 °		200 °C		Min. de	sign ı	netal te	mp	-29	-	_ at	J, I Dai	
6. N						exempted as pe	er UHA-6					a	test te	emperat	ure of .		n.a.	
	nact te			11	ndicate yes o	or no and the com												
	pact te			et nrocen	re	hydro.: 6,3 b	iai	Pro	of tes	t				11.0	и.			
7. <b>I</b> r 8. F	ydro., p	neu., or c		•														
7. <b>I</b> r 8. F	ydro., p ozzles, i	neu., or c		•		gs:								-				
7. Ir 8. H 9. N	ydro., p	inspection	, and s	afety valv		Ma	terial		_	ozzle Thic			rcement		achment (		Locat	
7. Ir 8. H 9. N	ydro., p lozzles, i Purpose let, Outlet, train, etc.)	nspection	, and s	meter Size	re openin	Mat Nozzle	F	lange	N	lom.	Corr.	Ma	terial	Noz	zle	Flange	(Insp. O	
7. Ir 8. H 9. N	ydro., p lozzles, i Purpose let, Outlet, train, etc.)	nspection No	, and s Dia or	meter Size	Type #150	Mar Nozzie SA-790 S31803	SA-1	82 F316L		lom. 5,49	Corr.	Ma SA-24	terial IO 316L	Noz UW-1	zle 6.1(c	Flange Wld.	(Insp. O	
7. Ir 8. H 9. N	ydro., p ozzles, i Purpose let, Outlet, train, etc.) Inlet A1	No.	Dia Dia or N	meter Size PS 3	Type #150	Mai Nozzle SA-790 S31803 SA-790 S31803	SA-1	82 F316L 82 F316L		Nom. 5,49 3,91	Corr. 0 0	SA-24 SA-24	terial IO 316L IO 316L	Noz UW-1 UW-1	zle 6.1(c 6.1(c	Flange Wld. Wld.	(Insp. O	
7. Ir 8. H 9. N	ydro., p ozzles, i Purpose let, Outlet, train, etc.) Inlet A1 Inlet A2 Outlet B1	No. 1	Dia or N	meter Size PS 3 PS 2 PS 16	Type #150 #150	Mar Nozzle SA-790 S31803 SA-790 S31803 SA-240 316L	SA-1 SA-1 SA-1	82 F316L 82 F316L 82 F316L		5,49 3,91 5,0	Corr.	SA-24 SA-24 Inte	terial IO 316L IO 316L egral	UW-1 UW-1 UW-1	zle 6.1(c 6.1(c 6.1(c	Flange Wld.	(Insp. O	
7. Ir 8. H 9. N	ydro., p ozzles, i Purpose let, Outlet, train, etc.) Inlet A1 Inlet A2 Outlet B1	No. 1 1 1 1 1 1	, and s Dia or NI NI	meter Size PS 3 PS 2 PS 16 PS 1	Type #150 #150 #150 #150	Mai Nozzle SA-790 S31803 SA-790 S31803	SA-1 SA-1 SA-1 SA-1	82 F316L 82 F316L		Nom. 5,49 3,91	0 0 0	SA-24 SA-24 Inte	terial IO 316L IO 316L	Noz UW-1 UW-1	2le 6.1(c 6.1(c 6.1(c 6.1(c	Flange Wld. Wld. Wld.	(Insp. O	
7. Ir 8. H 9. N	ydro., p ozzles, i Purpose let, Outlet, train, etc.) Inlet A1 Inlet A2 Outlet B1	No. 1	Dia or Ni Ni NF N	meter Size PS 3 PS 2 PS 16	Type #150 #150 #150 #150 #150	Mari Nozzle SA-790 S31803 SA-790 S31803 SA-240 316L SA-312 TP316L	SA-1 SA-1 SA-1 SA-1 SA-1	82 F316L 82 F316L 82 F316L 82 F316L	- 3 - 3 - 3	5,49 3,91 5,0 3,38	0 0 0 0	Ma SA-24 SA-24 Into	terial IO 316L IO 316L egral egral	UW-1 UW-1 UW-1 UW-1	2le 6.1(c 6.1(c 6.1(c 6.1(c 6.1(c	Wld. Wld. Wld. Wld. Wld.	(Insp. O	

- 20. Supports: Skirt No (Ves or no) Lugs 3 (Number) Legs n.a. Others 4 Brackets Attached Welded to head and shell (Where and how)
- 21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report (list the name of part, item number, Manufacturer's name, and identifying number):
  None

#### 22. Remarks

For non-corrosive service only. Safety valve is not in scope of supply of Schrader. All units are in [mm] unless otherwise stated. Spot RT performed according to UW-11(b) and UW-11(a)(5)(b) (RT4). E Head and E Shell = 0,85, No PWHT required. Impact testing exempted as per UHA-51(d).

lational Board Number:	1	6
Ifr. Representative:	light	Date: DEZ 16. 2015

### FORM U-1 (Cont'd)

CERTIFICATE OF SHOP COMPLIANCE
We certify that the statements in this report are correct and that all details of design, material, construction, and workmanship of this vessel
conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1.
U Certificate of Authorization Number U-51,435 Expires Sept. 11, 2018
Date Drz. 16 2015 Name Shrader Apparatebas Guable Signed (Manufacturer)
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 TÜV NORD Systems GmbH & Co. KG  of  Essen, Germany
have inspected the pressure vessel described in this Manufacturer's Data Report on, and
state that, 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.
Date DEZ 16 2015 Signed Schlupp (59 159 Commissions # 15644/A (National Board (incl. endorsements))
CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE
We certify that the statements 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 NumberExpires
Date Name Signed (Representative)
CERTIFICATE OF FIELD ASSEMBLY INSPECTION
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and employed by
of, have compared the statements in this Manufacturer's Data Report with the described pressure vessel
and state that parts referred to as data items, not included in the certificate of shop inspection, have been
inspected by me and to the best of my knowledge and belief, the Manufacturer has constructed and assembled this pressure vessel in accordance
with the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. The described vessel was inspected and subjected to a hydro-
static test ofBy 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.
Date Signed Commissions (National Board (incl. endorsements))

# 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	certified by	Schrader Apparat	ebau GmbH, Schleebergs	trasse 12, Ennigerloh 59320, C	3ermany					
		- " -	(Name and address of							
. Manufactured for		Evonik Degussa	Corporation, PO Box 868, (Name and address of Purch)							
		Evenik Corporation			,					
. Location of install	ation	Evonik Corporation, Mobile, 4201 Degussa Road, US-Theodore AL 36582 (Name and address)								
	vertical		Heat Exchanger		0915-01					
. Туре	Horizontal, vertical, or sphere)	(Ta	nk, separator, heat exch., etc.)							
	norizontal, vertical, or spiterer			6	2015					
n.a.		214-0451-10-001 R <sub>-</sub> 5 (Drawing number)		(National Board number)	(Year built)					
		(Drawing number)								
Data Report Item Number			Remarks							
14.	Course 4 : OD 406,4 , t	ength: 362 : Material : SA-2	40 316L; Thickness: 5 mm,	Corr. 0 ; Long. Joint : type 1 , Spot	, 0,85 ; Circum, Joint : type '					
	spot , 0,85 ; Heat Treat	ment : n.a.								
	_									
	U U		51,435	Septem	ber 11, 2018					
ertificate of Authoriz	ation: Type	No	EX	pires						
Du le mer	Name Sob	of Schmader	Drawarle Luis Co	webt and						
Date D.11. 16.108	Name	(Manufacturer)	ALTOGODA VI	ruignea	(Representative)					
		A 1 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GRON VUT							
DEZ 16 2015	Name Schl	UPP	Commis	SSIONS	15644/A					
vara A-1)	Name -	(Authorized Inspector)	AIA.	[National Board	(incl. endorsements)]					

### FORM U-5 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET

SHELL-AND-TUBE HEAT EXCHANGERS
the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

Manufactured an	d certified by _	Sc	nrader Apparate	ebau GmbH, Schl	eepergstrasse	12, Emilgerion 5	5020, Germany	
M		E	vonik Degussa	(Name and	d address of Manut Box 868, US-T		0	
Manufactured fo				(Name and addre	ess of Purchaser)			
. Location of insta	llation	EV	onik Corporatio	n, Mobile, 4201 D	and address)	US-THEODOTE AL	. 30302	
. Type	Vertical			0915-01			n,a.	
(Horizo	ontal, vertical, or sphe	ere)	(Manufact	turer's serial number)		(CRN) 2015		
	-10-001 Rev. 5 wing number)			(National Board numb	er)		(Year built)	
		FIXE	D SHELL-AND-1	UBE HEAT EXCHA	NGER DATA			
		ating Pressure	Max	ximum Design/Operat	ing Metal Temper	ature	Axial Differential Thermal	
Name of Condition	Shell Side (min./max.)	Tube Side (min./max.)	Shell	Channel	Tubes	Tubesheet	Expansion Range (min./max.)	
	(units)	(units)	(units)	(units)	(units)	(units)	(units)	
Design	-1 / +5,2 bar	-1 / +3,1 bar	200 °C	200 °C	200 °C	200 °C	0	
				-				
ata Report Item Nu	ımber			Re	emarks			
	_							
				4				
-A:E:A	insting, Tree	U	No	51,435	Expires	Se	ptember 11, 2018	
ertificate of Author			6	S. Jelie X		/	1.1-	
ate Det 16.10/5	Name	8 6616 Se	Manufactural	CONTROL OF LA CA	mblt si	igned	(Representative)	
		Schlupp	Imandiacidit	1600		V	# 15644/A	
ate DE2 16 2015	Name	Schlupp	1	UNU VI	Commissions	[Matiento	# 10044/A   Board (incl endorsements)	