175074
WA

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 **Corrected Copy**

1. Manufactured and certified by **Schoeller-Bleckmann Nitec GmbH, Hauptstrasse 2, Ternitz, A-2630, Austria**
(Name and address of Manufacturer)

2. Manufactured for **Stamicarbon BV, Sittard, NETHERLANDS**
(Name and address of Purchaser)

3. Location of installation **Fortigen LCC, Geneva, Nebraska**
(Name and address)

4. Type **Vertical** (Horizontal, vertical, or sphere) **Reactor** (Tank, separator, jkt. vessel, heat exch., etc.) **8796** (Manufacturer's serial number)

N/A (CRN) **DWG-175074-00 Rev 4** (Drawing number) **139** (National Board number) **2018** (Year built)

5. ASME Code, Section VIII, Div. 1 **2015/ N/A** [Edition and Addenda, if applicable (date)] **2156-1** (Code Case Number) **N/A** [Special Service per UG-120(d)]

Items 6-11 incl. to be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multichamber vessels.

6. Shell: (a) Number of course(s) **1** (b) Overall length **9.305M**

Course(s)			Material	Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B, & C)			Heat Treatment	
No.	Diameter	Length	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	1250 mm ID	9.305M	Multilayer see Remarks	102.46	0	N/A	Remarks	N/A	N/A	Remarks	N/A	N/A	N/A

Body Flanges on Shells

No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

7. Heads: (a) **SA 765 Gr.IV - 540°C / 300 min** (Material spec. number, grade or type) (H.T. - time and temp.) (b) **SA 765 Gr.IV - 540°C / 300 min** (Material spec. number, grade or type) (H.T. - time and temp.)

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)	Top	305 mm	0 mm	N/A	N/A	N/A	N/A	N/A	1480 mm			N/A	N/A	N/A
(b)	Bottom	328 mm	0 mm	N/A	N/A	N/A	N/A	N/A	1480 mm			N/A	N/A	N/A

Body Flanges on Heads

	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
(a)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A

8. Type of jacket **N/A** Jacket closure **N/A** (Describe as ogee & weld, bar, etc.)

If bar, give dimensions; if bolted, describe or sketch **N/A**

9. MAWP **230 bar(g)** (Internal) **N/A** (External) at max. temp. **220 °C** (Internal) **N/A** (External) Min. design metal temp. **-28.8 °C** at **230 bar(g)**

10. Impact test **Yes material SA765/IV, SA516/70, SA 266/2, SA724/B** [Indicate yes or no and the component(s) impact tested] at test temperature of **-28.8°C**

11. Hydro., pneu., or comb. test pressure **Hydro at 300.5 bar(g)** Proof test **N/A**

Items 12 and 13 to be completed for tube sections.

12. Tubesheet **N/A** [Stationary (material spec. no.)] **N/A** [Diameter (subject to press.)] **N/A** (Nominal thickness) **N/A** (Corr. allow.) **N/A** Attachment (welded or bolted)

N/A [Floating (material spec. no.)] **N/A** (Diameter) **N/A** (Nominal thickness) **N/A** (Corr. allow.) **N/A** (Attachment)

13. Tubes **N/A** (Material spec. no., grade or type) **N/A** (O. D.) **N/A** (Nominal thickness) **N/A** (Number) **N/A** [Type (Straight or U)]

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Manufacturer's Serial No. **8796** CRN **N/A** National Board No. **139**

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

14. Shell: (a) No. of course(s) **N/A** (b) Overall length **N/A**

Course(s)			Material	Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B, & C)			Heat Treatment	
No.	Diameter	Length	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Body Flanges on Shells

No.	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Location	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

15. Heads: (a) **N/A** (Material spec. number, grade or type) (H.T. - time and temp.) (b) **N/A** (Material spec. number, grade or type) (H.T. - time and temp.)

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Body Flanges on Heads

	Location	Type	ID	OD	Flange Thk	Min Hub Thk	Material	How Attached	Bolting			
									Num & Size	Bolting Material	Washer (OD, ID, thk)	Washer Material
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

16. MAWP **N/A** (Internal) **N/A** (External) at max. temp. **N/A** (Internal) **N/A** (External) Min. design metal temp. **N/A** at **N/A**.

17. Impact test **N/A** [Indicate yes or no and the component(s) impact tested] at test temperature of **N/A**.

18. Hydro., pneu., or comb. test pressure **N/A** Proof test **N/A**

19. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
NH3 Inlet N1	1	3"	Weld End	SA 790 UNS S32906		7.62 mm	0 mm		UW-16.1(v-1)		
Gas Inlet N2	1	3"	Weld End	SA 790 UNS S32906		7.62 mm	0 mm		UW-16.1(v-1)		
Liquid Inlet N3	1	3"	Weld End	SA 790 UNS S32906		7.62 mm	0 mm		UW-16.1(v-1)		

Additional Nozzles - See Attached U-4...

20. Supports: Skirt **Yes** (Yes or no) Lugs **N/A** (Number) Legs **N/A** (Number) Others **N/A** (Describe) Attached **Welded to bottom head** (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):

N/A

22. Remarks

Item 6)
Multilayer shell is made of:

Inner shell 25 mm thick / SA 516/70
full RT of long. and circ. seam

9 layers 7.94 mm thick / SA 724/B
full MT of completed seam of each layer

Outer shell 6 mm thick / SA 516/70
full MT of final seam

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Manufacturer's Serial No. **8796** CRN **N/A** National Board No. **139**

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 **15904** Expires **July 3, 2019**

Date 01/21/2019 Name **Schoeller-Bleckmann Nitec GmbH** (Manufacturer) Signed (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

TUV Nord Systems Gmbh & Co. KG, of Essen, Germany

have inspected the pressure vessel described in this Manufacturer's Data Report on **March 7, 2019**, 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 03/07/2019 Signed (Authorized Inspector) Commissions: **11328** (National Board Authorized Inspector 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 _____ (Assembler) 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

_____,

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 pressure test of _____. 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 _____ Signed _____ (Authorized Inspector) Commission _____ (National Board Authorized Inspector Commission number)

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

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(Name and address of Manufacturer)

2. Manufactured for **Stamicarbon BV, Sittard, NETHERLANDS**
(Name and address of Purchaser)

3. Location of installation **Fortigen LCC, Geneva, Nebraska**
(Name and address)

4. Type **Vertical** (Horizontal, vertical, or sphere) **Reactor** (Tank, separator, heat exch., etc.) **8796** (Manufacturer's serial number)

N/A (CRN) **DWG-175074-00 Rev 4** (Drawing number) **139** (National Board number) **2018** (Year built)

Data Report Item Number | Remarks

Additional nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
Liquid/Gas Outlet N4	**1**	**4"**	**Weld End**	**SA 790 UNS S32906**		**8.56 mm**	**0 mm**	**SA 765/IV**	**UW-16.1(v-1)**		
Manway N6	**1**	**ID 32"**	**Pad**	**SA 765/IV**		**332 mm**	**0 mm**		**UW-16.1(f-4)**		**Top Head**
HP Vent N7	**1**	**1 1/2"**	**Thr. Flange**	**SA 790 UNS S32906**	**SA 105**	**5.08 mm**	**0 mm**		**UW-16.1(v-1)**		

Certificate of Authorization: Type **"U"** No. **15904** Expires **July 3, 2019**

Date **01/21/2019** Name **Schoeller-Bleckmann Nitec GmbH** (Manufacturer) Signed (Representative)

Date **03/07/2019** Signed (Authorized Inspector) Commissions 11328 (National Board Authorized Inspector Commission number)