

# FORM U-1 MANUFACTURERS' DATA REPORT FOR PRESSURE VESSELS

as required by the provisions of the ASME Code rules, Section VIII, Division 1

1. Manufactured and certified by The Pfaudler Company, 820 Taylor St., Elyria, Ohio U.S.A.  
(name and address of manufacturer)

2. Manufactured for Shell Development Co., 3333 Highway 6 South, Houston, TX  
P.O. RE-410-CX08  
(name and address of purchaser)

3. Location of installation Same  
(name and address)

4. Type: Vert. Reactor E184-0386 CE184-0386 43021 1984  
(horiz. or vert., tank) (mfr's. serial no.) (CRN) (drawing no.) (Nat'l. Bd. no.) (year built)

5. The chemical and physical properties of all parts meet the requirements of material specifications of the **ASME BOILER AND PRESSURE VESSEL CODE**. The design, construction and workmanship conform to ASME Code, Section VIII, Division 1: 1983  
(year)

Win. 83 1251-1 -  
(addenda (date)) (Code Case no.) (special service per UG-120(d))

*Items 6-11 inclusive to be completed for single wall vessels, jackets of jacketed vessels, or shells of heat exchangers.*

6. Shell: SA-285 Gr.B 3/8 0 1 - 2 0 - 6.875  
(mat'l. (spec. no., grade)) (nom. thickness (in.)) (corr. allow. (in.)) (dia. ID (ft. & in.)) (length (overall) (ft. & in.))

7. Seams: DBFW - 70 - - DBFW - 1  
(long. (dbl., sngl.)) (RT (spot or full)) (eff. (%)) (HT temp. (\*F)) (time) (girth (dbl., sngl.)) (RT (spot, partial, or full)) (no. of courses)

8. Heads: (a) SA-285 Gr.B (b) -  
(mat'l. (spec. no., grade)) (mat'l. (spec. no., grade))

	Location (top, bottom, ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)
(a)	Bottom	.375	0	-	-	2:1	-	-	-	Concave
(b)	-	-	-	-	-	-	-	-	-	-

If removable, bolts used (describe other fastenings): -  
(mat'l. spec. no., gr. size. no.)

9. Type of jacket: Fig. 9-2 Type 2 Proof test: -

10. Jacket closure: Fig. 9-5 (i-1(a)) If bar, give dimensions: - If bolted, describe or sketch.  
(describe as ogee & weld, bar, etc.)

11. MAWP: 300/300w/FV at max. temp. 350 Min. temp.: - Hydro. - test press.: 450  
(psi) (\*F) (when less than -20°F) (psi)

*Items 12 and 13 to be completed for tube sections.*

12. Tubesheets: - - - - -  
(stationary mat'l. (spec. no., gr.)) (dia. (in.) (subject to pressure)) (nom. thickness (in.)) (corr. allow. (in.)) (attachment (welded, bolted))  
- - - - -  
(floating mat'l. (spec. no., gr.)) (dia. (in.)) (nom. thickness (in.)) (corr. allow. (in.)) (attachment)

13. Tubes: - - - - -  
(mat'l. (spec. no., gr.)) (OD (in.)) (nom. thickness (in. or gauge)) (no.) (type (straight or U))

*Items 14-17 inclusive to be completed for inner chambers of jacketed vessels or channels of heat exchangers.*

14. Shell: SA-53 Gr.B .375 0 1 - 0 0 - 1.9375  
(mat'l. (spec. no., gr.)) (nom. thickness (in.)) (corr. allow. (in.)) (dia. ID (ft. & in.)) (length (overall) (ft. & in.))

15. Seams: SMLS - 100 - - DBFW - 1  
(long. (dbl., sngl.)) (RT (spot or full)) (eff. (%)) (HT temp. (\*F)) (time) (girth (dbl., sngl.)) (RT (spot, partial, or full)) (no. of courses)

16. Heads: (a) Case 1251-1 (b) SA-234 WPM  
(mat'l. (spec. no., grade)) (mat'l. (spec. no., grade))

	Location (top, bottom, ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (convex or concave)
(a)	Top	1.5"	0	-	-	-	-	-	19	Flat
(b)	Bottom	.375	0	10.5	2"	-	-	-	-	Both

If removable, bolts used (describe other fastenings): SA-193B7, 7/8", 12  
(mat'l. spec. no., gr. size. no.)

17. MAWP: FV to 150 at max. temp. 450 Min. temp.: - Hydro. - test press.: 150  
(psi) (\*F) (when less than -20°F) (psi)

*Items on reverse side to be completed for all vessels where applicable.*

**FORM U-1 (back)**

**18. Nozzles, inspection and safety valve openings:**

Purpose (inlet, outlet, drain, etc.)	Number	Dia. or Size	Type	Mat'l.	Nom. Thickness	Reinforcement Material	How Attached	Location
Inlet (3)	1.5 (1)	1 (1) 1.25	Pad	Case 1251-1	750#	-	Drld. Tr	Top Hd
Outlet	1	1"	Pad	SA-562	750#	-	Welded	Bot Hd
Jacket	3	3/4"	Cplg	SA-216WCA	3000#	-	Welded	Jacket
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-

19. Supports: Skirt No Lugs - Legs - Other Liftstand Attached Bolted to top & Jacket  
(yes or no) (no.) (no.) (describe) (where and how)

20. Remarks: Manufacturers' Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: \_\_\_\_\_

(name of part, item number, mfr's name and identifying stamp)

Model PR12-5-150-300/300 JOWBT glass lined inner chamber for chemical service. Carbon steel jacket for non-corrosive service.

**CERTIFICATE OF SHOP COMPLIANCE**

We certify that the statements made in this report are correct and that all details of design, material, construction and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1.

"U" Certificate of Authorization no. 11,112 expires April 21, 19 86

Date 9-18-84 Name The Pfaudler Company Signed Phil Jahn  
(manufacturer) (representative)

**CERTIFICATE OF SHOP INSPECTION**

Vessel constructed by The Pfaudler Company at Elyria, Ohio

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the state or province of Ohio and employed by H.S.B.I. & I. CO.

of Hartford, Ct. have inspected the pressure vessel described in this Manufacturers' Data Report on 9/18, 19 84, and state that, to the best of my knowledge and belief, the manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in the Manufacturers' Data Report. Furthermore, neither the inspector nor his 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 9/18/84 Signed Bruce North Commissions NR 9918 Ohio Comm.  
(Authorized Inspector) (Nat'l. Bd. (incl. endorsements) state, prov. and no.)

**CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE**

We certify that the field assembly construction of all parts of this vessel conforms with the requirements of Section VIII, Division 1 of the ASME BOILER AND PRESSURE VESSEL CODE.

"U" Certificate of Authorization no. \_\_\_\_\_ expires \_\_\_\_\_, 19 \_\_\_\_\_.

Date \_\_\_\_\_ Name \_\_\_\_\_ Signed \_\_\_\_\_  
(Assembler that certified and constructed field assembly) (by 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 the state or province of \_\_\_\_\_ and employed by \_\_\_\_\_

of \_\_\_\_\_ have compared the statements in this Manufacturers' 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 that to the best of my knowledge and belief, the manufacturer has constructed and assembled this pressure vessel in accordance with ASME Code, Section VIII, Division 1. The described vessel was inspected and subjected to a hydrostatic test of \_\_\_\_\_ psi.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in the Manufacturers' Data Report. Furthermore, neither the inspector nor his 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 \_\_\_\_\_  
(Authorized Inspector) (Nat'l. Bd. (incl. endorsements) state, prov. and no.)