



FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS

As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

Form U-1

1. Manufactured and certified by **O'Neal's Welding & Fabrication, Inc. 4253 FM 624 Robstown, Texas, USA 78380**
(Name and address of Manufacturer)

2. Manufactured for **TICONA POLYMERS, INC. HWY. 77 SOUTH BISHOP, TX. 78343**
(Name and address of Purchaser)

3. Location of Installation **SAME**
(Name and address)

#93068

4. Type **HORIZ. HEAT EXCH. 2646 NONE 2646 721 2001**
(Horiz., vert., or sphere) (Tank, separator, jkt. vessel, heat exch., etc.) (Mfg's serial No.) (CRN) (Drawing No.) (Nat'l. Bd. No.) (Year Built)

5. ASME Code, Section VIII, Div. 1 **1998 A 00 NONE NONE**
Edition and Addenda (date) Code Case No. 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 multi-chamber vessels.

6. Shell: (a) No. of course(s): **4** (b) Overall length (ft & in.): **19 - 11 3/4" F/F**

No.	Course(s)		Material Spec./Grade or Type	Thickness		Long Joint (Cat. A)			Circum. Joint (Cat. A, B & C)				Heat Treatment				
	Diameter	in. Length (ft & in.)		Nom.	Corr.	Type	Full	Spot	None	Eff.	Type	Full	Spot	None	Eff.	Temp.	Time
1	33" ID	7-0"	SA-240-316 L	.3125	.0312	1		SPOT	.85	1		SPOT	.85		NONE		
2	46 X 33"	1-0	SA-240-316 L	.500	.031	S		NONE	.85	1		SPOT	.85		NONE		
3	33"	3-6 1/2	SA-240-316 L	.3125	.0312	1		SPOT	.85	1		SPOT	.85		NONE		

7. Heads: (a) (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp. (b) (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp.

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

(a)

(b)

If removable, bolts used (describe other fastening)

(Mat'l Spec. No., Grade, size, No.)

8. Type of Jacket

Jacket Closure

(Describe as ogee & weld, bar, etc.)

If bar, give dimensions

If bolted, describe or sketch.

9. MAWP **87** psi at max. temp. **400** °F Min. design metal temp. **-20** °F at **87** psi.
(internal) (external) (internal) (external)

10. Impact test **NO** EXEMPT FROM IMPACT TEST PER UHA-51(d)(1)(a) UCS-66(c)
(Indicate yes or no and the component(s) impact tested)

11. Hydro., pneu., or comb. test press. **113** Proof test

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: **SA-240-316 35 1/4" 2 5/8" .03125 WELDED**
Stationary (Mat'l Spec. No.) Dia., in. (subject to press.) Nom. thk., in. Corr. Allow., in. Attachment (welded or bolted)

SA-240-316 35 1/4" 2 5/8" .03125 WELDED
Floating (Mat'l Spec. No.) Dia., in. Nom. thk., in. Corr. Allow., in. Attachment

13. Tubes: **SA-249-TP316 L .750 .065 M.W. 1040 STRAIGHT**
Mat'l Spec. No., Grade or type O.D., in. Nom. thk. in. or gauge Number Type (Straight or U)

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): **2** (b) Overall length (ft & in.): **5 - 8" F/S**

No	Course(s)		Material Spec./Grade or Type	Thickness		Long Joint (Cat. A)				Circum. Joint (Cat. A, B & C)				Heat Treatment			
	Diameter, in.	Length (ft & in.)		Nom.	Corr.	Type	Full	Spot	None	Eff.	Type	Full	Spot	None	Eff.	Temp	Time
1	33" ID	2-9 9/16	SA-516-70	.375	.125	1		SPOT	.85	1		SPOT	.85		NONE		
2	33" ID	2-9 9/16	SA-516-70	.375	.125	1		SPOT	.85	1		SPOT	.85		NONE		

15. Heads: (a) **SA-516-70 N NONE** (b) **SA-516-70 N NONE**
(Mat'l Spec. No., Grade or Type) H.T. - Time & Temp. (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp.

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

(a) **END .375 2:1 NO YES S NONE .85**

(b) **END .375 2:1 NO YES S NONE .85**

If removable, bolts used (describe other fastening)

SA-193-B7 SA-194-2H 3/4" 32 P.C.S.
(Mat'l Spec. No., Grade, Size, No.)

16. MAWP 87 (internal) (external) psi at max. temp. 500 (internal) (external) °F Min. design metal temp. - 20 °F at 87 psi.
17. Impact test NO EXEMPT FROM IMPACT TEST PER UG - 20 (f) UCS - 66 (c)
(Indicate yes or no and the component(s) impact tested)
113 Proof test

18. Hydro., pneu., or comb. test press.

19. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
INLET	5	18 " 150	LJ	SA -240	SA -105	.375	.03125	SA -240 -316	*	LOOSE	
OUTLET	5	6 " 150	LJ	SA -312	SA -105	.280	.0312	SA -240 -316	*	LOOSE	
INLET / OUTLET	2	20 " 150	RFWN	SA -106 B	SA -105	.500	.125		*	WELDED	
PSV	1	2 " 150	RFWN	SA -106 B	SA -105	.344	.125	SA -516 -70	*	WELDED	
VENT / DRAIN	2	1.5 150	RFWN	SA -312	SA -182	.200	.0312		*	WELDED	

20. Supports: Skirt NO (Yes or No) Lugs 4 (No.) Legs (No.) Others SADDLES (Describe) Attached WELDED -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, mfg's. name and identifying number)

22. Remarks: * PER UW - 16.1 (e) SAFETY DEVICE BY OTHERS PER UG - 125 (a) CUSTOMER ITEM HE -3076
MATL. TYPE 316 L FULL VACUUM SHELL : AT 200 F. TUBES : 300 F.
HYDRO TESTED IN NEW & COLD CONDITION BOTH SIDES AT 117 PSIG.

#93068

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. 18938

Expires SEPT. 6

2004

Date: 11/21/01

Name: O'Neal's Welding & Fabrication, Inc.
(Manufacturer)

Signed: *[Signature]*
(Representative)

CERTIFICATE OF SHOP 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 TEXAS and employed by COMMERCIAL UNION INSURANCE COMPANY of BOSTON, MASS. have inspected the pressure vessel described in this Manufacturer's Data Report on Nov. 21, 2001, 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 this Manufacturer's 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: Nov. 21, 2001

Signed: *[Signature]*
(Authorized Inspector)

Commissions: N.B. 12444A, T 1694
(Nat'l Board incl. endorsement, State, Province and No.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME Code, Section VIII, Division 1.

U Certificate of Authorization No.

Expires

, 19

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 the State or Province of 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 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 this Manufacturer's 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

(Authorized Inspector)

Commissions

(Nat'l Board incl. endorsement, State, Province and No.)

93068

721



W
RT3

87 400 87 500

-20 87 -20 87

2646

2001

113

113

HE-3076

33 X 240

4500078679

16711

A EVAPORATOR VENT CONDENSER
F.V. SHELL: 200 F. F.V. TUBES: 300 F.