FORM U-1 MANUFACTURERS' DATA REPORT FOR PRESSURE VESSELS

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

89-037

ITEM NO. S116-7307-15

1. Manufactured and certified by Southern Heat Exchanger Corp. 400 65th St. E., Tuscaloosa, AL (name and address of manufacturer)
2. Manufactured for E.I. duPont de Nemours & Co. Inc. Wilmington, De. (name and address of purchaser)
3. Location of installation E.I. duPont de Nemours & Co. Inc. Beaumont, Tx. (name and address)
4. Type: Ht. Exch. (horiz. or vert., tank) | 89-037 (mfr's. serial no.) | — (CRN) | SP-2099-2 (drawing no.) | 5790 (Nat'l. Bd. no.) | 1990 (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: 1986 (year)

AB7 (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-106 B (mat'l. (spec. no., grade)) | .375" (nom. thickness (in.)) | .125" (corr. allow. (in.)) | 1'-1.250" (dia. ID (ft. & in.)) | 15'-11.875" (length (overall) (ft. & in.))
7. Seams: Sml S. (long. (dbl., sngl.)) | — (RT (spot or full)) | 85% (eff. (%)) | — (HT temp. (°F)) | — (time) | SNGL. BUTT (girth (dbl., sngl.)) | SPOT (RT(spot, partial, or full)) | 2 (no. of courses)
8. Heads: (a) SA-516-70 (mat'l. (spec. no., grade)) (b) — (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	.3125"	.125"	(2) SETS	28" O.D. FLANGED & FLUED HEADS					FLAT
(b)										

If removable, bolts used (describe other fastenings): LINE 7. (mat'l., spec. no., gr., size, no.)

9. Type of jacket: None Proof test: —
10. Jacket closure: None (describe as ogee & weld, bar, etc.) If bar, give dimensions: — If bolted, describe or sketch.
11. MAWP: 75 (psi) at max. temp. 400 (°F). Min design metal temp.: 15 (°F) at 75 (psi). Hydro., ~~pneu. or comb.~~ test pressure 115 (psi).

Items 12 and 13 to be completed for tube sections.

12. Tubesheets: SA-240-316L (stationary mat'l. (spec. no., gr.)) | 18" (dia. (in.) (subject to pressure)) | 1.8125" (nom. thickness (in.)) | 0 (corr. allow. (in.)) | WELDED. (attachment (welded, bolted))
— (floating mat'l. (spec. no., gr.)) | — (dia. (in.)) | — (nom. thickness (in.)) | — (corr. allow. (in.)) | — (attachment)
13. Tubes: SA-249-316L (mat'l. (spec. no., gr.)) | .750" (OD (in.)) | 16 (nom. thickness ~~(in. or~~ gauge)) | 92 (no.) | STRAIGHT (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-240-316L (mat'l. (spec. no., gr.)) | .250" (nom. thickness (in.)) | 0 (corr. allow. (in.)) | 1'-1.50" (dia. ID (ft. & in.)) | 1'-6.375" (length (overall) (ft. & in.))
15. Seams: SNGL. BUTT (long (dbl., sngl.)) | SPOT (RT (spot or full)) | 85% (eff. (%)) | — (HT temp. (°F)) | — (time) | SNGL. BUTT (girth (dbl., sngl.)) | — (RT (spot, partial, or full)) | 1 (no. of courses)
16. Heads: (a) SA-240-316L (mat'l. (spec. no., grade)) (b) — (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/Bottom	.250"	0			2:1				CONCAVE
(b)										

If removable, bolts used (describe other fastenings): SA-193-B7 (24) EA. 5/8"-11. (mat'l., spec. no., gr., size, no.)

17. MAWP: 225 (psi) at max. temp. 400 (°F). Min design metal temp.: 15 (°F) at 225 (psi). Hydro., ~~pneu. or comb.~~ test pressure 340 (psi).

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
IN-OUT	1-1	4"-150#	RFWN	SA-106 B	.337"	INTEGRAL	WELDING	SHELL
IN	1	4"-300#	"	SA-312-316	.237"	"	"	BONNET
OUT	2	3"-"	"	"	.216"	"	"	"
IN	1	1½"-"	"	"	.1334	"	"	"
VENT	1	1"-"	"	"	.133"	"	"	"

19. Supports: Skirt No (yes or no) Lugs 4 (no.) Legs ____ (no.) Other ____ (describe) Attached SHELL, WELDED. (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)

"UG-46(a)" "UG-20(f)"

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. 7037 expires Feb. 28, 19 91.

Date 04-20-90 Name Southern Heat Exchanger Corp. (manufacturer) Signed [signature] (representative)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by Southern Heat Exchanger Corporation at Tuscaloosa, AL.

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 Commercial Union Insurance Co. of Boston, MA have inspected the pressure vessel described in this Manufacturers' Data Report on 04-20, 19 90, 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 04-20-90 Signed [signature] (Authorized Inspector) B. M. Brooks Commissions NB5446 NY 2182 (Nat'l. Bd. (incl. endorsements) state, prov. and no.)

4/23/90 BMB

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 ____ (assembler that certified and constructed field assembly) 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 ____ 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 ____ (Authorized Inspector) Commissions ____ (Nat'l. Bd. (incl. endorsements) state, prov. and no.)