

FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

S-24

1. Manufactured and certified by Evans & Sons Process Tank Co., Inc. 1851 Shop Road, Columbia, SC 29201
(Name and address of manufacturer)
2. Manufactured for Hardwicke Chemical Co., Rt. 2, Box 50A, Elgin, S. C. 29045
(Name and address of purchaser)
3. Location of installation Hardwicke Chemical Co., I-20 (Elgin Exit) Elgin, S.C. 29045
(Name and address)
4. Type Vertical C-86-1213 --- C-86-1213(R2) 181 1986
(Horiz. or vert., tank) (Mfr's serial No.) (CRN) (Drawing) (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 Rules, Section VIII, Division 1 1983
Year
- W85 None None
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, or sheets of heat exchangers

6. Shell: SA-240-316 .105 0 7'-6" 4'-0"
Matl. (Spec. No., Grade) Nom. Thk. (in.) Corr. Allow. (in.) Diam. I.D. (ft & in.) (Length Overall) (ft & in.)
7. Seams: SNGL BUTT None 55 ---
Long. (Dbl., Sngl.) R.T. (Spot or Full) Eff. (%) H.T. Temp. (F)
- FILLET --- 1
Time Girth (Dbl., Sngl.) R.T. (Spot, Partial, or Full) No. of Courses
8. Heads: (a) Matl. SA-240-316 (b) Matl. ---
(Spec. No., Grade) (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)	BTM	.105	--	--	--	--	--	--	--	Concave
(b)	--	--	--	--	--	--	--	--	--	---

If removable, bolts used (describe other fastenings) None

(Matl. Spec No., Gr., Size, No.)

9. Type of Jacket Dimpled Proof Test ---
10. Jacket Closure Weldment If bar, give dimensions --- If bolted, describe or sketch.
(Describe as ogee & weld, bar, etc.)
11. MAWP 100 psi at max. temp. 366 °F. Min. temp. (when less than -20° F) --- °F.
Hydro, pneu., or comb. tes press. 155 psi.

Items 12 and 13 to be completed for tube sections

12. Tubesheets: --- --- --- --- ---
Stationary Matl. (Spec No., Gr.) Diam. (in.) (Subject to pressure) Nom Thk (in.) Corr. Allow (in.) Attach (Welded, Bolted)
- --- --- --- ---
Floating Matl. (Spec No., Gr.) Diam. (in.) Nom Thk (in.) Corr. Allow (in.) Attach
13. Tubes: (COIL) SA-312-316 2.375" .154" 8.5 Turns Spiral
Matl. (Spec No., Gr.) O.D. (in.) Nom. Thk. (in. or Gauge) Number Type (Straight or "U")

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

14. Shell: SA-240-316 .375" 0 7'-6" O.D. 8'-0" S/S
Matl. (Spec. No., Grade) Nom. Thk. (in.) Corr. Allow. (in.) Diam I.D. (ft & in.) Length (Overall) (ft & in.)
15. Seams: DBL BUTT SPOT 85 ---
Long. (Dbl., Sngl.) R.T. (Spot or Full) Eff. (%) H.T. Temp. (F)
- DBL BUTT Partial 1
Time Girth (Dbl., Sngl.) R.T. (Spot, Partial, or Full) No. of Courses
16. Heads: (a) Matl. SA-240-316 (b) Matl. SA-240-316
(Spec. No., Grade) (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	.3125"	--	76"	9"	--	--	--	--	Concave
(b)	BTM	.3125"	--	76"	9"	--	--	--	--	Both

If removable, bolts used (describe other fastenings) None

(Matl. Spec No., Gr., Size, No.)

17. MAWP Full Vacuum & 100 psi at max. temp. 366 °F. Min. temp. (when less than -20° F) --- °F.
Hydro, pneu., or comb. test press. 155 psi.

Form U-1 (Back)

18. Nozzles, Inspection and Safety Valve Openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diam. or Size	Type	Matl.	Nom. Thk.	Reinforcement Matl.	How Attached	Location
AGITATOR	1	12"	PAD	SA-240-316	1.5"	Inherent	UW16.1	
ACCESS	1	18"	T-BOLT	SA-240-316	.5"	Inherent	UW16.1	TOP
COLUMN	1	12"	FLG'D	SA-312-316	.406"	Inherent	UW16.1	
	1	6"	FLG'D	SA-312-316	.280"	Inherent	UW16.1	
	1	3"	FLG'D	SA-312-316	.216"	Inherent	UW16.1	
VARIOUS	9	2"	FLG'D	SA-312-316	.154"	Inherent	UW16.1	
	2	1"	FLG'D	SA-312-316	.133"	Inherent	UW16.1	
THERMO	1	1 1/2"	SCR'D	SA-182-316	.208"	Inherent	UW16.1	
SAMPLE	1	1"	SCR'D	SA-182-316	.196"	Inherent	UW16.1	

19. Supports: Skirt No Lugs No Legs 4 Other None Attached Welded to Btm Head on DBLRS.
(Yes or no) (No) (No) (Describe) (Where and how)

20. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: T-Bolt Closure - #A34178-3 MUELLER (6 LUG)
(Name of part, item number, manufacturer name and identifying stamp)

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. 15,018 expires 3-13, 19 88
 Date April 4, 1986 Co. name Evans & Sons Process Tank Co. Signed [Signature]
(Manufacturer) (Representative)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by Evans & Sons Process Tank Co., Inc. at 1851 Shop Road, Columbia, S.C. 29201

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Pennsylvania and employed by Lumbermans Mutual Casualty Company

of 4-4-86 have inspected the pressure vessel described in this Manufacturer's Data Report on 4-4, 19 86, 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 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 4-4-86 Signed [Signature] Commissions NB9126 PA2346
(Authorized Inspector) (Nat'l Board, State, Province 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 _____ Co. 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/or the State or Province of _____ 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 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 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 _____ Commissions _____
(Authorized Inspector) (Nat'l Board (incl. endorsements), State, Prov., and No.)