

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

CN3603B

Certified By Doyle & Roth Mfg. Co., Inc. One Morse Ave., Lackawanna Co. Simpson, Pa. 18407
Manufactured by (Name and address of manufacturer)

2. Manufacturer for American Hoechst Corp. (Name and address of purchaser)
3. Location of installation 129 Quidnick St., Coventry, R.I. 02816 (Name and address)
4. Type Horiz. Vessel No. 1-4327-2 (Name and address) B-6640-1 12380 Year Built 1984 (Horiz. or vert. tank) (Mfr's Serial No.) (CAN) (Drawing) (Nat'l Bld No.)
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 and Addenda to (Year)
- W-83 and Code Case no. Special service per UG-120(d)

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)

Items 6-11 incl. to be completed for single walled vessels, jackets of jacketed vessels, or shells of heat exchangers

6. Shell: Material SA312 T316 Nominal Thickness 1.65 in. Corrosion Allowance in. Diam. ft 10-3/4 Length 7 ft 11-7/8 (Spec. No., Grade)
7. Seams: Longitudinal DWB R.T. Efficiency 70 % H.T. Temp F (Welded, Dbl., Sngl. Lap, Butt) (Spot or Full)
- Time Girth (Welded Dbl., Sngl. Lap, Butt) R.T. (Spot, Partial or Full) No. of Courses 1
8. Heads: (a) Material (Spec. No., Grade) (b) Material (Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio
(a)	-	-	-	-	-	-
(b)	-	-	-	-	-	-
	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)		
(a)	-	-	-	-		
(b)	-	-	-	-		

If removable, bolts used (describe other fastenings) (Material, Spec. No., Gr., Size, No.)

9. Type of Jacket Proof Test If bolted, describe or sketch.
10. Jacket Closure (Describe as ogee & weld, bar, etc.) If bar, give dimensions
11. Constructed for max. allowable working pressure 150 psi at max. temp. 300 F Min. temp. (when less than -20 F) F
Hydrostatic, pneumatic, or combination test pressure 135 psi

Items 12 and 13 to be completed for tube sections

12. Tubesheets: Stationary—Material SA240 T316SS Diam. 14-1/2 in. Nominal Thickness 3/4 in. Corrosion Allowance in. Attachment Welded Floating—Material (Spec. No., Grade) Diam. in.
(Welded, Bolted)
- Nominal Thickness in. Corrosion Allowance in. Attachment
13. Tubes: Material SA240 T316SS O.D. 1 in. Nominal Thickness 18 gauge Number 44 Type Strt. (Spec. No., Gr.) (Straight or "U")

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

14. Shell: Material SA312 T316 Nominal Thickness 1.65 in. Corrosion Allowance in. Diam. ft 10-3/4 Length ft 10 in. (Spec. No., Gr.)
15. Seams: Longitudinal DWB R.T. Efficiency 70 % H.T. Temp F Time F (Welded, Dbl., Sngl. Lap, Butt) (Spot or Full)
- Girth R.T. (Spot, Partial, or Full) No. of courses 1 (Welded, Dbl., Sngl. Lap, Butt)
16. Heads: (a) Material SA240 T316SS (Spec. No., Grade) (b) Material SA-285C w/ T316SS Liner 1/8" Tk (Spec. No., Gr.)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio
(a)	End	3/16"	-	-	-	2:1
(b)	End	1"	-	-	-	-
	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)		
(a)	-	-	-	Concave		
(b)	-	-	14-1/2"	-		

If removable, bolts used (describe other fastenings) Alloy SA193 B7M & SA194 2H (12) 5/8" (Material, Spec. No., Gr., Size, No.)

FORM U-1 (BACK)

17. Constructed for max. allowable working pressure 90 at max temp. 300° F. Min. temp. (when less than -20 F) - F.
Hydrostatic, pneumatic, or combination test pressure 135 psi.

Items below to be completed for all vessels where applicable

18. Safety Valve Outlets: Number Unknown Size - Location Up to Others

19. Nozzles:

Purpose (Inlet, Outlet, Drain)	Number	Diam. or Size	Type	Material	Nominal Thickness	Reinforcement Material	How Attached
Inlet-Outlet	3	3"	LJ	SA312 T316SS	Sch 10	-	Welded
Inlet-Outlet	1	6"	RF/SO	SA312 T316SS	Sch 10	-	Welded
Vent-Drain	2	3/4"	Cplgs.	SA182 T316SS	3000#	-	Welded

20. Inspection Openings: See Nozzles

Manholes No. - Size - Location -

Handholes No. - Size - Location -

Threaded No. - Size - Location -

21. Supports: Skirt - Lugs - Legs - Other (2) Saddles Attached Welded to Shell
(Yes or no) (No.) (No.) (Describe) (Where and how)

22. Remarks: Horizontal Shell & Tube Heat Exchanger
Tag Equip. # B-202, Vent Cooler

CERTIFICATE OF 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.

Date DEC 20 1984 Signed Doyle & Roth Mfg. Co., Inc. by Robert H. Hatter
(Manufacturer) (Representative)

"U" Certificate of Authorization No. 982 expires 1/31/87, 19-

CERTIFICATE OF SHOP INSPECTION

Vessel made by Doyle & Roth Mfg. Co., Inc. at One Morse Ave., Lackawanna Co., Simpson

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 PA. and employed by Factory Mutual System, Arkwright Boston, Manufacturers Insurance Mutual Boiler and Machinery Division of Norwood, Mass. have inspected the pressure vessel described in this Manufacturers' Data Report on DEC 20 1984

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 DEC 20 1984 Signed Walter E. Tilley Commissions NO 8845 Pa 2361
(Inspector) (Nat'l Board, State, Province and No.)

CERTIFICATE OF COMPLIANCE FOR FIELD WORK

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.

Date - Signed - by -
(Manufacturer) (Representative)

"U" Certificate of Authorization No. - expires -, 19-

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

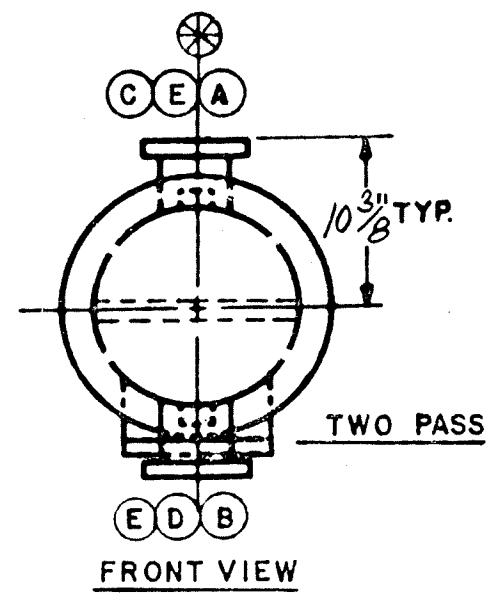
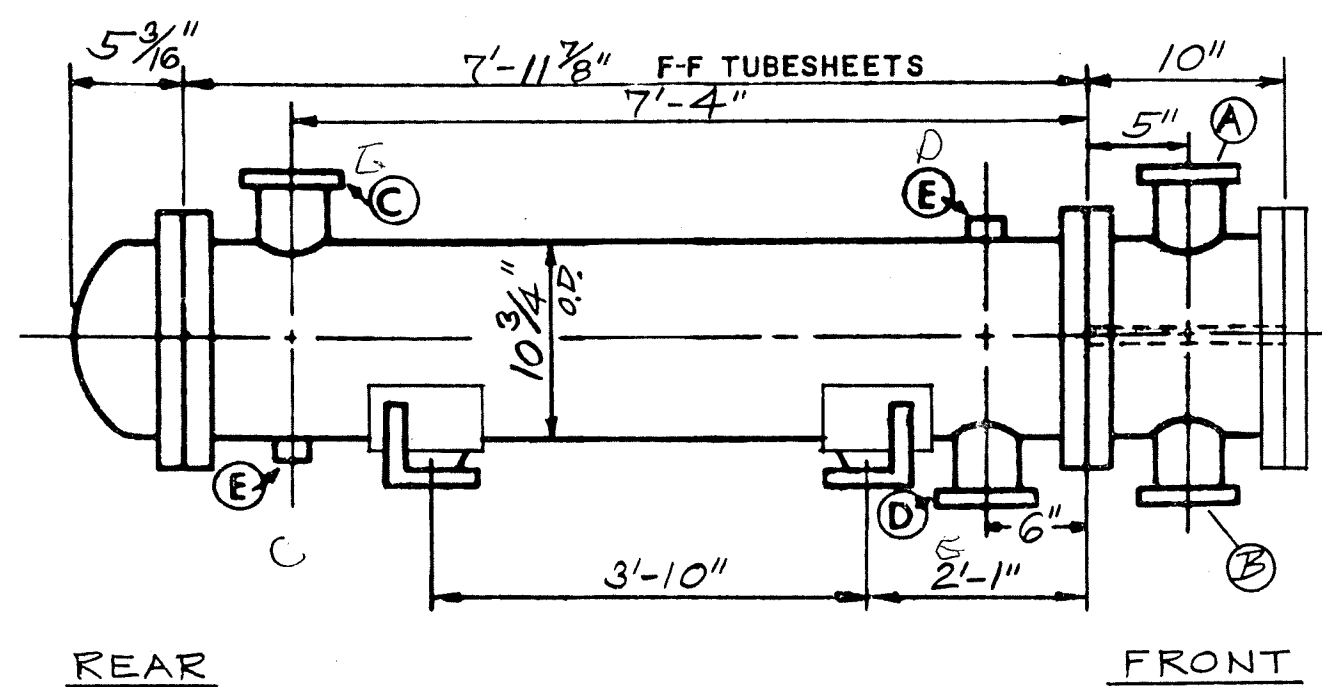
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of - and employed by -

of - have compared the statements in this 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 this 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 Board, State, Province and No.)



D & R STD MODEL **VS1082-8H**

SHELL & TUBESIDE CONSTRUCTION

TYPE 316 S.S.

GENERAL NOTES

- CONSTRUCTION TO COMPLY WITH ASME CODE SECTION VIII DIV. 1 LATEST EDITION **W83**
- ASME STAMP & NAT L BD INSPECTION ☒ YES ☐ NO
- TEMA CLASS C TYPE **AEM**
- 92** SQ FT HEAT TRANSFER SURFACE
- ALL BOLT HOLES TO STRADDLE CENTERLINES
- SEE **FRONT** VIEW FOR TRUE NOZZLE ORIENTATION
- PAINT CARBON STEEL ONLY
ONE SHOP COAT GRAY ZINC CHROMATE PRIMER
- WEIGHT **800** LBS EMPTY
1040 LBS. FLOODED WITH WATER
- WELD TUBES TO TUBESHEETS ☐ YES ☒ NO
- SHELL TO HAVE NO.1 MILL FINISH.
- WIRE BRUSH CLEAN ALL WELDS.

DESIGN CONDITIONS	SHELL SIDE	TUBE SIDE
DESIGN TEMPERATURE	300°F	300°F
DESIGN PRESSURE	FLD 90 PSI	90 PSI
TEST PRESSURE	135 PSI	135 PSI
CORROSION ALLOWANCE	NONE	NONE
RADIOGRAPHY	NONE	NONE

MATERIALS OF CONSTRUCTION				NOZZLES & FITTINGS				
SHELL		10 3/4" O.D. 316 S.S. CYLINDER SA312 SCH 10 (.165 NOM)		MARK	SIZE	DESCRIPTION	NECK	SCH
TUBE SHEETS		14 1/2" O.D. 316 S.S. SA240 3/4 TK		A	3"	150 - STD ANSI L.J. SA108 WITH STUB END	SA312 316 S.S.	10
TUBES		(44) 1" O.D. x 18 BWB SA240 316 S.S. TUBES 8'-0" LG. ON 1 1/4" Δ PITCH		B	3"	150 - STD ANSI L.J. SA105 WITH STUB END	SA312 316 S.S.	10
BON. & CHAN. FLG.		14 1/2" O.D. FLG QUALITY STEEL SA181 GR.1 1/8 TK FACED WITH S.S.		C	6"	150 - STD ANSI RF SA105; FACED @ S.S.	SA312 316 S.S.	10
CHAN. CYL.		10 3/4" O.D. 316 SS SA-312 SCH 10 (.165 NOM)		D	3"	150 - STD ANSI L.J. SA105 WITH STUB END	SA312 316 S.S.	10
BONNET COVER		10 3/4" O.D. 316 S.S. SA240 SEMI-ELLIP HD S 2 S F X 3/16 TK		E	3/4"	3000 - 316 S.S. HALF CPLG SA-182	—	—
BAFFLES		316 SS SEGMENTAL TYPE 24" NOM PITCH 45% VERT. CUT						
SHELL EXP. JT.		NONE						
GASKETS		COMPRESSED ASBESTOS 1/16 TK X 12 O.D. X 11 1/4 I.D.						
BOLTING		ALLOY SA-193 B7M STUDS & SA-194 CL 2H NUTS (12) 5/8 DIA ON 13 1/8 B.C.						
SHELL SUPPTS.		STEEL A-36 PER D & R DWG SK-41-C WITH S.S. PAD						
CHAN. COVER		14 1/2" O.D. STEEL SA-285C, 1" TK, @ 316 SS LINER 1/8 TK						
				REVISIONS			DATE	

CUSTOMER **AMERICAN HOECHST**

P.O. NO. **503736**

D & R JOB NO. **J-4327-2**

TAG EQUIP. NO. **B-202**

VENT COOLER

NO. UNITS REQ'D _____



DOYLE & ROTH MFG CO INC
26 BROADWAY NEW YORK N.Y. 10004

DRAWN CK10-31-84	SCALE NONE	REV
CHECKED	DATE	B-6640
APPROVED	DATE	

CN 3603B B-202