

LOWER SECTION TO CLEAN UP COLUMN #5

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

DIVISION I

As required by the Provisions of the ASME Code Rules

1. Manufactured by Process Engineering & Machine Co., Inc., 442 York St. Elizabeth, N.J.
(Name and address of Manufacturer)

2. Manufactured for Hoffmann-La Roche, Incorporated, Nutley, New Jersey
(Name and address of Purchaser)

3. Type Vert. Kind Column Vessel No. 4657-B () Natl. Bd. No. 2773 Yr. Built 1971
(Horiz. or Vert.) (Tank, Jacketed, Heat Exch.) (Mfr. Serial) (State & State No.)

Items 4-9 incl. to be completed for single wall vessels (such as air tanks), jackets of jacketed vessels, or shells of heat exchangers.

4. SHELL: Material SA240-TP304 T.S. 75,000 Nominal Thickness 1/4 In. Allowance 0 In. Corrosion In. Diam. 4 Ft. 6 1/2 In. Length 5 Ft. 10 In.
(Kind and Spec. No.) (Fig. or P.D. & Spec. Min. T.S.)

5. SEAMS: Long W.D.B. H.T. No R.T. Spot Sectioned No Efficiency 85 %
(Welded, Dbl., Single, Lap, Butt) (Yes or No) (Spot or Complete) (Yes or No)

If riveted describe seams fully on reverse side of form.

6. HEADS (a) Material SA240-TP304 T.S. 75,000 (b) Material SA-240-TP-304 T.S. 75,000
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter (Convex or Concave)
(a) Bottom 1/4" 211 Concave
(b) Top Cone 1/4" Tk. x 54-1/2" O.D. (L.R.) x 18" O.D. (S.E.) x 31-5/8" overall

If removable, bolts used _____ Other fastening Welded to Shell
(Material, Spec. No., T.S., Size, Number) (Describe or Attach Sketch)

7. STAYBOLTS: _____ If hollow _____ Attachment _____ Pitch _____ X _____ Diam. _____
(Material) (Size of Hole) (Threaded, Welded) (Horiz.) (Vert.) (Nominal)

8. JACKET CLOSURE: _____
(Describe as cover & weld, bar, etc. If bar, give dimensions, if bolted, describe or sketch)

9. Constructed for max. allowable working press. 30 psi at max. temp. 240 ° F. Hydrostatic Test Horiz. Pos. Press 75 psi.
(less than -20°) (Combination)

Items 10 and 11 to be completed for tube sections.

10. TUBE SHEETS: Stationary. Material _____ Diam. _____ In. Thickness _____ In. Attachment (Welded, Bolted)
(Kind & Spec. No.) (Subject to Pressure)
Floating. Material _____ Diam. _____ In. Thickness _____ In. Attachment _____
(Kind & Spec. No.)

11. TUBES: Material _____ O.D. _____ In. Thickness _____ Inches or Gage Number _____ Type (Straight or U)
(Kind & Spec. No.)

Items 12-15 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

12. SHELL: Material _____ T.S. _____ Nominal Thickness _____ In. Allowance _____ In. Corrosion In. Diam. _____ Ft. _____ In. Length _____ Ft. _____ In.
(Kind and Spec. No.) (Fig. or P.D. & Spec. Min. T.S.)

13. SEAMS: Long _____ H.T. _____ R.T. _____ Sectioned _____ Efficiency _____ %
(Welded, Dbl., Single, Lap, Butt) (Yes or No) (Spot or Complete) (Yes or No)

If riveted describe seams fully on reverse side of form.

14. HEADS (a) Material _____ T.S. _____ (b) Material _____ T.S. _____ (c) Material _____ T.S. _____
Location Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter (Side to Pressure Convex or Concave)
(a) Top, bottom, ends _____
(b) Channel _____
(c) Floating _____

If removable, bolts used (a) _____ (b) _____ (c) _____
(Material, Spec. No., T.S., Size, Number) Other fastening _____
(Describe or Attach Sketch)

15. Constructed for max. allowable working press. _____ psi at max. temp. _____ ° F. Hydrostatic Test _____ Press _____ psi.
(Min. temp. (when less than -20°) _____ ° F. Combination)

Items below to be completed for all vessels where applicable.

16. SAFETY VALVE OUTLETS: Number _____ Size _____ Location _____

Purpose (Inlet, Outlet, Drain)	Number	Diam. or Size	Type	Material	Thickness	Reinforcement Material	How Attached
Outlet	(1)	2"-150#ASA LJ FIG.	SA-312-TP-304	Sch. #10	----	Welded	
with 2"-90° Sch. #10 L.R. Weld Elbow							
PSV & Vac. Breaker	(1)	2"-150#ASA LJ FIG.	SA-312-TP-304	Sch. #10	----	Welded	
TI	(1)	1-1/2"-150#ASA RP SO FIG.	SA-312-TP-304	Sch. #40	----	Welded	
Bundle Conn.	(1)	14"-150#ASA LJ FIG.	SA-240-TP-304	1/4" Tk.	----	Welded	
Outlet	(6)	6"-150#ASA LJ FIG.	SA-312-TP-304	Sch. #10	----	Welded	
& PIC	(2)	3/4" Couplings	S/S-304	3,000#	----	Welded	
High Glass	(2)	1/2"-150#ASA RP SO FIG.	SA-312-TP-304	Sch. #10	----	Welded	
Upper Column Conn.	(1)	18"-150#ASA RP SO FIG.	SA-240-TP-304	1/4" Tk.	----	Welded	

B3 5751

EQUIP. CODE NO. C M N 243

Hydrostatic }
Pneumatic or } Test
Combination } Press _____ psi.

FORM U-1 (back)

18. INSPECTION MANIFOLD, No. One (1) Size 18" Location Shell
 OPENINGS: SKIRT VENTS No. Four (4) Size 4" Location Skirt Top
Skirt Access No. One (1) Size 18" Location Skirt Bottom
 19. SUPPORTS: Skirt Yes Lugs (Number) _____ Legs (Number) _____ Other (Describe) Head Welded
 (Yes or No) (Where & How)

20. REMARKS: Unit is to be used as the Lower Section of Clean-Up Column #5 in a
chemical process. Hoffmann-La Roche, Inc. P.O.# E-262738-E, 1 Pos.# B3-5751,
Arthur G. McKee & Co. No. MCK-3725-26, Equipment No. CMN-243.
* Ship To: Hoffmann-La Roche, Incorporated
Belvidere, New Jersey
** HLR Equipment No. XTC-212 is bolted to HLR Equipment No. CMN-243 to form
one (1) Clean-Up Column #5; 67'-6" overall (approx.)
 (Brief description of purpose of the vessel, as Air Tank, After Cooler, Jacketed Cooker, etc. State contents of each part.)

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 Unfired Pressure Vessels.
 Date APR 29 1971 Signed Process Engineering & Machine Company, Inc. By Richard J. Maurer
 (Manufacturer)

Certificate of Authorization Expires December 31, 1973

CERTIFICATE OF SHOP INSPECTION

VESSEL MADE BY Process Engineering & Mach. Co., Elizabeth, New Jersey

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province New Jersey and employed by Employers Commercial Union Insurance Company of America have inspected the pressure vessel described in this manufacturer's data report on APR 29 1971 19____, and state that to the best of my knowledge and belief, the manufacturer has constructed this pressure vessel in accordance with the applicable sections of the ASME Boiler and Pressure Vessel Code.

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 APR 29 1971 19____

E. D. Babcock Commission N.B. NO. 5483
 Inspector's Signature Nat'l Board or State and No.

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 _____ 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 the applicable sections of the ASME Boiler and Pressure Vessel Code. 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 _____ 19____

 Inspector's Signature Commission _____
 Nat'l Board or State and No.