

# 99663

## 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 Struthers Scientific & International Corp., Warren, Pennsylvania

(Name and address of Purchaser)

3. Type Vert. Kind Heat Exch. Vessel No. 4779 ( ) ( ) Natl. Bd. No. 2889 Yr. Built 1971

(Horiz. or Vert.)

(Tank, Jacketed, Heat Exch.)

(Mfrs. Serial)

(State &amp; 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) 3-7/8"4. SHELL: Material SA-53-B(OH) T.S. 60,000 Nominal Thickness 3/16 Corrosion Allowance 1/16 In. Diam. 2 Ft. 0 In. Length 17 Ft. 4 1/4

(Kind and Spec. No.)

(Fig. or F.B. &amp; Spec. Min. T.S.)

(In. Allowance)

(In. Diam.)

(Ft.)

(In.)

5. SEAMS: Long SMLS H.T. No R.T. No Sectioned No Efficiency 100 %

(Welded, Dbl., Single, Lap, Butt)

(Yes or No)

(Spot or Complete)

(Yes or No)

(Efficiency)

(%)

Girth W.D.B.H.T. NoR.T. NoSectioned NoNo. of Courses 2\*\*\*

If riveted describe seams fully on reverse side of form.

6. HEADS (a) Material SA-53-B(OH) T.S. 60,000 (b) Material SA-53-B(OH) T.S. 60,000

(Top, bottom, ends)

Thickness

Crown Radius

Knuckle Radius

Elliptical Ratio

Conical Apex Angle

Hemispherical Radius

Flat Diameter

T.S.

Side to Pressure (Convex or Concave)

(a)

(b)

If removable, bolts used (Material, Spec. No., T.S., Size, Number) Other fastening (Describe or Attach Sketch)7. STAYBOLTS: (Material) If hollow (Size of Hole) Attachment (Threaded, Welded) Pitch (Horiz.) X (Vert.) Diam. (Nominal)8. JACKET CLOSURE: (Describe as ogee & weld, bar, etc. If bar, give dimensions, if bolted, describe or sketch)9. Constructed for max. allowable working press. 20 psi at max. temp. 250 °F. Hydrostatic Test 135 psi.

Items 10 and 11 to be completed for tube sections

10. TUBE SHEETS: Stationary. Material SA-240-TP-304-L Diam. 25.013 In. Thickness 1 1/4 In. Attachment Welded

(Kind &amp; Spec. No.)

(Subject to Pressure)

(Welded, Bolted)

Floating. Material

(Kind &amp; Spec. No.)

Diam. 25.013 In. Thickness 1 1/4 In. Attachment Welded

SA-249

11. TUBES: Material TP304-L O.D. 2 In. Thickness #16 In. Gauge Number 55 Type Straight

(Kind &amp; Spec. No.)

(In. Thickness)

(In. Gauge)

Number

Type

(Straight or U)

Items 12-15 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers. 1 @ 0' 8-1/2"12. SHELL Material SA240TP304L T.S. 70,000 Nominal 3/16 Corrosion Allowance 0 In. Diam. 2 Ft. 0 In. Length 0 Ft. 3 In.

(Kind and Spec. No.)

(Fig. or F.B. &amp; Spec. Min. T.S.)

(In. Allowance)

(In. Diam.)

(Ft.)

(In. Length)

(In.)

13. 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)

(Efficiency)

(%)

Girth W.D.B.H.T. NoR.T. SpotSectioned NoNo. of courses 1 (Ea.)

If riveted describe seams fully on reverse side of form.

14. HEADS (a) Material SA240TP304L T.S. 70,000 (b) Material SA-53-B(OH) T.S. 60,000

(a)

Location

Thickness

Crown Radius

Knuckle Radius

Elliptical Ratio

Conical Apex Angle

Hemispherical Radius

Flat Diameter

T.S.

Side to Pressure (Convex or Concave)

(a) Top, bottom, ends

3/16"

24"

1-1/2"

Convex

(b) Channel

(c) Floating

If removable, bolts used (a) SA-193-B7, 125,000, 5/8" x (24) (b) (Material, Spec. No., T.S., Size, Number)(c) (Describe or Attach Sketch)15. Constructed for max. allowable working press. Full Vac. psi at max. temp. 250 °F. Hydrostatic Test 115 psi.

Items below to be completed for all vessels where applicable.

16. SAFETY VALVE OUTLETS: Number 1 Size 1/2" Location Top

17. NOZZLES

Purpose (Inlet, Outlet, Drain)	Number	Diam. or Size	Type	Material	Thickness	Reinforcement Material	How Attached
Inlet	(1)	8"-150#ASA RF WN Flg.		SA-53-B(OH)	Sch. #80		Welded
Outlet	(1)	2"-150#ASA RF WN Flg.		SA-53-B(OH)	Sch. #80		Welded
Outlet	(1)	3"-150#ASA RF WN Flg.		SA-53-B(OH)	Sch. #80		Welded
Outlet	(1)	1"-150#ASA RF WN Flg.		SA-106-B(OH)	Sch. #80		Welded
Outlet	(1)	1-1/2"-150#ASA RF WN Flg.		SA-312-TP-304L	Sch. #40		Welded
Inlet	(1)	24"-150#ASA LJ Flg.		SA-240-TP-304L	1/4" Tk.		Welded

with 24"-90° Sch. #10 Short Rad. Weld Elbow

\* If postweld heat-treated

\* List under remarks other internal or external pressures with coincident temperature when applicable.

(Over)



FORM U-1 (back)

18. INSPECTION Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
 OPENINGS: Handholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
 Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
 19. SUPPORTS: Skirt No (Yes or No) Lugs Four (4) (Number) Legs No (Number) Other No (Describe) Shell-Welded Attached (Where & How)  
 20. REMARKS: Unit is to be used as a First Stage Heater in a chemical process. TEMA size 23-240, Type BEM(V), Struthers P.O.# 9-70-05-10105.069, Pos.# B3-2601.  
\* Ship To: Hoffmann-La Roche, Inc. Equip.# HEX-580  
Belvidere, New Jersey  
\*\* Allowable Stress reduced to 12,000 psi per UW-12-C.  
\*\*\* Shell is equipped with a Vapor Belt(2) 30"O.D. x 3/8"Tk. Flanged only flued Heads with(1) Shell Sect. 3/8" x 30" O.D. x 16"Lg. (SA-285-C-Flg.-TS-55,000)  
 (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 AUG 31 1971 19 \_\_\_\_\_ Signed Process Engineering & Machine Company, Inc. By Nikolai Manara (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 have inspected the pressure vessel described in this manufacturer's data report on AUG 31 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 AUG 31 1971 19 \_\_\_\_\_

P.D. Rabouru  
 Inspector's Signature

Commissions N.B. NO. 5483  
 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

Commissions

Nat'l Board or State and No.