

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

As required by the Provisions of the ASME Code Rules

1. Manufactured by Ryan Industries, Inc., 4800 Allmond Ave., Louisville, Ky. 40214  
(Name and address of Manufacturer)
2. Manufactured for ~~35004~~ National Cylinder Gas, 840 N. Michigan Ave., Chicago, Ill.  
(Name and address of Purchaser)
3. Type Vert. Kind Tank Jacketed Jacketed Vessel No. (5127) ( ) ( ) Natl. Bd. No. 5127 Yr. Built 1970  
(Horiz. or Vert.) (Tank, Jacketed, Heat Exch.) (Mfrs. 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 SA240T304SS S. 75,000 Nominal Thickness 3/8 In. Allowance Qn. Corrosion Qn. Diam. 4 Ft. 0 In. Length 5 Ft. 7 In. 3/4

5. SEAMS: Long Double Butt H.T. No X.R. Complete Sectioned No Efficiency 100 %  
(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 T304SS T.S. 75,000 Girth Double Butt H.T. No X.R. Complete Sectioned No No. of Courses 1  
(Top, bottom, ends) Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Pressure (Convex or Concave)

	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a) Top	.349	-	-	2:1	-	-	-	Concave
(b) Bottom	.349	-	-	2:1	-	-	-	Concave

If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(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 ogee & weld, bar, etc. If bar, give dimensions, if bolted, describe or sketch)

9. Constructed for max. allowable working press. 250 psi at max. temp. 100 °F. less than -20° -320 °F. Min. temp. (when less than -20°) -320 °F. Test Combination Hydrostatic } Test Press 404 psi.  
(Pneumatic or Combination)

Items 10 and 11 to be completed for tube sections.

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

Floating. Material \_\_\_\_\_ Diam. \_\_\_\_\_ In. Thickness \_\_\_\_\_ In. Attachment \_\_\_\_\_  
(Kind & Spec. No.)

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

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 F.B. & Spec. Min. T.S.)

13. SEAMS: Long \_\_\_\_\_ H.T. \_\_\_\_\_ X.R. \_\_\_\_\_ 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. \_\_\_\_\_ Girth \_\_\_\_\_ H.T. \_\_\_\_\_ X.R. \_\_\_\_\_ Sectioned \_\_\_\_\_ No. of courses \_\_\_\_\_  
(Top, bottom, ends) 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) \_\_\_\_\_  
(Material, Spec. No., T.S., Size, Number)

(c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or Attach Sketch)

15. Constructed for max. allowable working press. \_\_\_\_\_ psi at max. temp. \_\_\_\_\_ °F. less than -20° \_\_\_\_\_ °F. Test Combination Hydrostatic } Test Press \_\_\_\_\_ psi.  
(Pneumatic or Combination)

Items below to be completed for all vessels where applicable.

16. SAFETY VALVE OUTLETS: Number 1 minimum Size 3/4" minimum Location Vent Line

17. NOZZLES

Purpose (Inlet, Outlet, Drain)	Number	Diam. or Size	Type	Material	Thickness	Reinforcement Material	How Attached
Trycock	1	.625	Bar	304SS	.1175	-	Welded
Low Pres.	1	.625	Bar	304SS	.1175	-	Welded
High Pres.	1	.875	Bar	304SS	.2425	-	Welded
Top Fill	1	1.500	Bar	304SS	.180	-	Welded
Bot. Fill	1	1.500	Bar	304SS	.180	-	Welded
Vent	1	1.500	Bar	304SS	.180	-	Welded
Liq. Draw	1	1.250	Bar	304SS	.1800	-	Welded

<sup>1</sup> If postweld heat-treated. <sup>2</sup> List under remarks other internal or external pressures with coincident temperature when applicable.

**FORM U-1 (back)**

18. INSPECTION Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
 OPENINGS: Handholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
 Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_

19. SUPPORTS: Skirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other 2 straps Attached Welded  
 (Yes or No) (Number) (Number) (Describe) (Where & How)  
to shell centerline

20. REMARKS:  
660 gallon gross vacuum jacketed cryogenic storage vessel  
Data for inner vessel only, outer protective vessel non-coded

(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 Jan. 16, 1970 Signed Ryan Industries, Inc. By John Capeland  
 (Man. (Liner) Quality Control Dept.  
 Certificate of Authorization Expires December 31, 1970

**CERTIFICATE OF SHOP INSPECTION**

VESSEL MADE BY Ryan Industries, Inc. at 4800 Almond Ave., Lville, Ky.

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State of Kentucky and employed by Commercial Union Ins. Co. of Amer. of Boston, Mass.

have inspected the pressure vessel described in this manufacturer's data report on Jan. 16, 1970, 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 Jan. 16, 1970 Commissions Ohio 1367  
W. Shuckleton PA. 1676  
 Inspector's Signature Nat'l Board or State and No. N.B. 3364

**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 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 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. \_\_\_\_\_