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

As required by the Provisions of the ASME Code Rules

P.O. 54511

1. Manufactured by Ryan Industries, Inc., 4800 Allmond Avenue, Louisville, Kentucky 40214 (Name and address of Manufacturer)

2. Manufactured for ~~XXXXX~~ National Cylinder Gas 840 N. Michigan, Ave. Chicago, Ill. (Name and address of Purchaser)

Jacketed

3. Type Vertical (Horiz. or Vert.) Kind Tank (Tank, Jacketed, Heat Exch.) Vessel No. (4853) (Mfrs. Serial) ( ) (State & State No.) N.B. Bd. No. 4853 Yr. Built 1969

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 T304SS (Kind and Spec. No.) T.S. 75,000 (Flg. or F.B. & Spec. Min. T.S.) Nominal Thickness .348 In. Corrosion Allowance 0 In. Diam. 4 Ft. 0 In. Length 5 Ft. 3 3/4 In.

5. SEAMS: Long Double Butt (Welded, Dbl., Single, Lap, Butt) H.T. No (Yes or No)[1] R.T. Complete (Spot or Complete) Sectioned No (Yes or No) Efficiency 100 %

If riveted describe seams fully on reverse side of form.

Girth Double Butt H.T. No R.T. Complete Sectioned No No. of Courses 1

6. HEADS (a) Material SA240 T304SS T.S. 75,000 (b) Material SA240 T304SS T.S. 75,000

Location (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	.349	-	-	2:1	-	-	-	Concave
(b) Bottom	.349	-	-	2:1	-	-	-	Concave

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[2] 250 psi at max. temp. 100 °F. Min. temp. (when less than -20°) -320 °F. Hydrostatic / Pneumatic or / Combination Test Press 404 psi. plus full external vacuum plus hydro head

Items 10 and 11 to be completed for tube sections.

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

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

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

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

12. SHELL Material ( ) (Kind and Spec. No.) T.S. ( ) (Flg. or F.B. & Spec. Min. T.S.) Nominal Thickness In. Corrosion Allowance In. Diam. Ft. In. Length Ft. In.

13. SEAMS: Long (Welded, Dbl., Single, Lap, Butt) H.T. (Yes or No)[1] R.T. (Spot or Complete) Sectioned (Yes or No) Efficiency %

If riveted describe seams fully on reverse side of form.

Girth H.T. R.T. Sectioned No. of courses

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) ( ) (Material, Spec. No., T.S., Size, Number) (b)

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

15. Constructed for max. allowable working press[2] psi at max. temp. °F. Min. temp. (when less than -20°) °F. Hydrostatic / Pneumatic or / Combination Test Press psi.

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	.1500	-	Welded

[1] If postweld heat-treated. [2] List under remarks other internal or external pressures with coincident temperatures when applicable.

(Over)

FORM U-1 (back)

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

19. SUPPORTS: Skirt _____ (Yes or No) Lugs _____ (Number) Legs _____ (Number) Other 2 straps (Describe) Attached Welded (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 April 18, 19 69 Signed Ryan Industries, Inc. (Manufacturer) By John Copeland Quality Control Department

Certificate of Authorization Expires December 31, 1970

CERTIFICATE OF SHOP INSPECTION

VESSEL MADE BY Ryan Industries, Inc. at 4800 Allmond Ave., Louisville, Ky.

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province Kentucky and employed by Commercial Unica Insurance Co. of Amer. of Boston, Massachusetts have inspected the pressure vessel described in this manufacturer's data report on April 18, 1969, 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 April 18 19 69

W. Hawkins
Inspector's Signature

Commissions Ohio 1367, Pa. 1676, N.B. 3364
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 _____

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