

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

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1. Manufactured and certified by ALLOY INDUSTRIES, 200 RYAN STREET, SOUTH PLAINFIELD, NEW JERSEY 07080
(Name and address of Manufacturer)
2. Manufactured for Merck Sharp & Dohme, Barceloneta, Puerto Rico
(Name and address of Purchaser)
3. Location of Installation Merck Sharp & Dohme, Barceloneta, Puerto Rico
(Name and address)

4. Type: VERTICAL JKT'D HYDROGENATOR 4359 - D-3054-G 2897 2006
(Horiz., vert., or sphere) (Tank, separator, jkt. vessel, heat exch., etc.) (Mfg's serial No.) (CRN) (Drawing No.) (Nat'l. Bd. No.) (Year built)
5. ASME Code, Section VIII, Div. 1 2004 - 2005 10/27/06 - NONE
Edition and Addenda (date) Code Case No. Special Service per UG-120(d)

APPENDIX EE HALF PIPE JACKET

Items 6 - 11 incl. to be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multi-chamber vessels.

6. ~~Shell~~ (a) No. of course(s): (20) TURNS @ 4 9/16" (b) Overall length (ft & in.): 7' - 10 7/8"

Course(s)			Material	Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter, in.	Length (ft & in.)	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
2	1.75"R	209'-5 1/4"	SA240304L	.109"	0"	6	NONE	45	3	NONE	60	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-

7. ~~HEADS~~ (a) SA312TP304L (b) -
3" Half Pipe (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full	Spot
(a)	BTM HEAD	.120"	0"	1.75"R	-	-	-	-	-	YES	YES	6	NONE	45
(b)	-	-	-	-	-	-	-	-	-	-	-	-	-	-

If removable, bolts used (describe other fastening) -

(Mat'l Spec. No., Grade, size, No.)

8. Type of jacket 3" FULL HALF PIPE JKT. ON 4 1/2" PITCH Jacket closure PIPE WELDED
(Describe as ogee & weld, bar, etc.)
- If bar, give dimensions - If bolted, describe or sketch.

9. MAWP 150 FV psi at max. temp. 400 - °F Min. design metal temp. -20 °F at 150 psi.
(internal) (external) (internal) (external)

10. Impact test JKT. EXEMPT FROM IMPACT PER UHA-51 (d) (e) at test temperature of - °F
(Indicate yes or no and the component(s) impact tested)

11. Hydro. ~~TEST~~ test press. 207 Proof test APPENDIX EE HALF PIPE JKT

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: Stationary (Mat'l Spec. No.) Dia., in. (subject to press.) Nom. thk., in. Corr. Allow., in. Attachment (welded or bolted)
- Floating (Mat'l Spec. No.) Dia., in. Nom. thk., in. Corr. Allow., in. Attachment

13. Tubes: Mat'l Spec. No., Grade or Type O.D., in. Nom. thk., in. or gauge Number Type (Straight or U)

Items 14 - 18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell (a) No. of course(s): 1 (b) Overall length (ft & in.): 8' - 9"

Course(s)			Material	Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter, in.	Length (ft & in.)	Spec./Grade or Type	Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
1	80" O.D.	8'-6"	SA240316L	.875"	0"	1	FULL	1	1	FULL	1	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-

15. Heads: (a) SA240316L (b) SA240316L
(Mat'l Spec. No., Grade or Type) H.T. - Time & Temp (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)	TOP	.7514"	0"	-	-	2:1	-	-	-	YES	YES	-	-	-
(b)	BOTTOM	.7686"	0"	-	-	2:1	-	-	-	YES	YES	-	-	-

If removable, bolts used (describe other fastening) -

(Mat'l Spec. No., Grade, Size, No.)

16. MAWP 300 FV psi at max. temp. 400 400 °F Min. design metal temp. -20 °F at 300 psi.
(internal) (external) (internal) (external)

17. Impact test VESSEL EXEMPT FROM IMPACT TEST PER UHA-51 (d) & (e) at test temperature of °F
(Indicate yes or no and the component(s) impact tested)

18. Hydro., ~~shell, nozzle~~ test press. 418 Proof test

19. Nozzles, inspection, and safety valve openings: **Safety Valve Elsewhere in System.** **Figures UW 16.1 2-4**

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	* How Attached		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
MANWAY	1	20"-300#	RING	SA240316L	-	.50"	0"	SA240316L	TYPE h	-	TOP HEAD
AGIT. MT.	1	14"-300#	S.O.	SA312TP316L	SA182F316L	.375"	0"	SA240316L	TYPE h	TYPE 3	-
S. GLASS	1	4"-300#	PAD	SA240316L	-	2"	0"	-	TYPE d	-	TOP HEAD
SAMPLE	1	2"-300#	PAD	SA240316L	-	1.9375"	0"	-	TYPE d	-	-
VENT	1	10"-300#	L.J.	SA312TP316L	SA182F304	SCH40	0"	SA240316L	TYPE h	TYPE 1	-
PROCESS	6	2"-300#	L.J.	SA312TP316L	SA182F304	SCH80	0"	-	TYPE d	TYPE 1	-
PROCESS	5	4"-300#	L.J.	SA312TP316L	SA182F304	SCH40	0"	SA240316L	TYPE h	TYPE 1	-

20. Supports: Skirt Lugs Legs 4 Others Attached BOTTOM HD. WELDED
(Yes or No) (No.) (No.) (Describe) (Where and How)

21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:
(List the name of part, item number, mfg's. name and identifying number)

22. Remarks: VESSEL TO BE USED AS A 2,500 GAL. HYDROGENATOR IN A CHEMICAL PROCESS, PO# 3Z16146711 - ITEM# ST-750

* NO NON DESTRUCTIVE EXAMINATIONS WERE PERFORMED ON CAT. C & D WELDS.

CERTIFICATE OF SHOP 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,

U Certificate of Authorization No. 7130

Expires January/31/2008

Date 10/27/06 Name ALLOY INDUSTRIES

(Manufacturer)

Signed Frank J. Counts

(Representative)

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of NJ and employed by ONE BEACON AMERICA INSURANCE COMPANY of BOSTON, MASS have inspected the pressure vessel described in this Manufacturer's Data Report on 10/27/06, 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 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 10/27/06 Signed [Signature]

(Authorized Inspector)

Commissions NB 7493 NABNS NJ 632 NY 2669 OH 10

(Nat'l Board incl. endorsement, State, Province and No.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements on this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME Code, Section VIII, Division 1,

U Certificate of Authorization No.

Expires

Date Name

(Assembler)

Signed

(Representative)

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

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

(Authorized Inspector)

Commissions

(Nat'l Board incl. endorsement, State, Province and No.)

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