

REPLACEMENT BUNDLE 99097

Equip # 10026488
POB # 213E3626

FORM U-2 MANUFACTURER'S PARTIAL DATA REPORT
A Part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and certified by Atlas Industrial Manufacturing Co., 81 Somerset Place, Clifton, N.J. 07012
(Name and address of Manufacturer)
2. Manufactured for Roche Vitamins Inc. Belvidere Blend Plant, 206 Roche Drive, Belvidere, NJ 07823-1113.
(Name and address of Purchaser)
3. Location of installation Roche Vitamins Inc. 233 Roche Drive, Belvidere, NJ 07823-1113.
(Name and address)
4. Type Replacement Tube Bundle / Bonnets 10243 N/A
(Description of vessel part (shell, two-piece head, tube bundle)) (Mfg's serial No.) (CRN)
- 8708 D-16736-1 Atlas Industrial Mfg. Co. 1999
(Nat'l. Bd. No.) (Drawing No.) (Drawing prepared by) (Year built)
5. ASME Code, Section VIII, Div. 1 1995 and 1997 N/A N/A
Edition and Addenda (date) Code Case No. Special Service per UG-120(d)

Items 6-11 incl. to be completed for ~~XXXXXX~~ shell of heat exchangers, or chamber of multi-chamber vessels.

6. Shell (a) No. of course(s): N/A (b) Overall length, ft & in. : _____

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

7. Heads : (a) N/A (b) _____
(or Exp. Joint) (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp. (Mat'l Spec. No., Grade or Type) H.T. - Time & Temp.

(a)	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.		

If removable, bolts used (describe other fastening) _____
(Mat'l Spec. No., Grade, size, No.)

8. Type of jacket N/A Jacket closure N/A
(Describe as ogee & weld, bar, etc.)

if bar, give dimensions N/A If bolted, describe or sketch.

9. MAWP N/A psi at max. temp. _____ °F Min. design metal temp. _____ °F at _____ psi.
(internal) (external) (internal) (external)

10. Impact test N/A
(Indicate yes or no and component(s) impact tested)

11. Hydro, pneu. or comb. test press. N/A Proof test N/A

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: SA-240, 316L 27 1/8" & 27 3/8" 3/4" 0" Bolted
Stationary (Mat'l Spec. No.) Dia., in. (subject to press.) Nom. thk., in. Corr. Allow., in. Attachment (welded or bolted)

- N/A _____
Floating (Mat'l Spec. No.) Dia., in. Nom. thk., in. Corr. Allow., in. Attachment

13. Tubes: SA-249, T-316L 1" 16 BWG (A.W.) 256 Straight
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 ~~XXXXXX~~ channels of heat exchangers.

14. Shell (a) No. of course(s) 1 / 1 (b) Overall length, ft & in. : 1' / 1 1/4"

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	27 7/8" O.D.	0'- 1'	SA-240, 316L		3/8"	0"	1	None			.70	--	None			--	N/A	N/A
1	27 7/8" O.D.	0'- 1 1/4'	SA-240, 316L		1/4"	0"	1	None			.70	--	None			--	N/A	N/A

Form U-2 (Back)

15. Heads: (a) SA-240, 316L (Mat'l Spec. No., Grade or Type) N/A H.T. - Time & Temp. (b) SA-240, 316L (Mat'l Spec. No., Grade or Type) N/A 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)	End	1/2"	0"						27"	---	---	S	None	1.0
(b)	End	1/2"	0"						27 1/4"	---	---	S	None	1.0

If removable, bolts used (describe other fastening) Welded
(Mat'l Spec. No., Grade, size, No.)

16. MAWP N/A (internal) (external) psi of max. temp. (internal) (external) °F. Min. design metal temp. °F at psi.

17. Impact test No, UHA-51
(indicate yes or no and component(s) impact tested)

18. Hydro., pneu., or comb. test press. 300 Proof test N/A

19. Nozzles, inspection and safety valve openings:

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 Fig. UW-16.1	Flange Fig. 2-4	
Inlet/Outlet	2	3" O.D.	Sq. End	SA-312W, TP316L	---	.180"	0"		(k)	---	

20. Supports: Skirt No (Yes or no) Lugs No (No.) Legs No (No.) Others N/A (Describe) Attached N/A (Where and how)

21. Remarks: #27-117 1/2 Replacement Tube Bundle/Bonnets, Tema Type B-U.
Roche Vitamins Inc. P.O. No. 4500005006
Allas Job # 10515, UG-46 (a).
Tube Bundle Diameter = 2'-3 7/8', Tube Bundle Length = 9'- 9 1/2'.
Roche Vitamins Inc. is Responsible for Design, (MAWP: FV & 200 psi @ 400 Degrees F,
MDMT: -20 Degrees F @ FV & 200 psi.)
Bundle/Bonnets used as spare for Item No. 213-E-3600, Nat'l Bd. No. 9., Serial No. 7650,
Item No. 213-E-3626, Nat'l Bd. No. 10, Serial No. 7650 & Item No. 213-E-3613, Nat'l Bd. No. 11,
Serial No. 7650. Exchangers originally manufactured by Arthur F. Smith, Inc.

CERTIFICATE OF SHOP/FIELD COMPLIANCE

We certify that the statements made in this report are correct and that all details of material, construction, and workmanship of this pressure vessel part conform to the ASME Code for Pressure Vessels, Section VIII, Division 1.

U Certificate of Authorization No. 5027 Expires APRIL 30, 19 99
 Date MAR 12 1999 Name ATLAS INDUSTRIAL MANUFACTURING CO. Signed [Signature]
(Manufacturer) (Representative)

CERTIFICATE OF SHOP/FIELD 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 of NEW JERSEY and employed by H.S.B.I. & I. CO of Hartford, CT. have inspected

the pressure vessel part described in this Manufacturer's Data Report on MAR 12 1999, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel part 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 part 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 MAR 12 1999 Signed [Signature] Commissions NB 7050AB, NJ 476
(Authorized Inspector) (National Board incl. endorsement, State, Province and No.)

ATLAS

NAT'L B 8-708
CERTIFIED INDUSTRIAL CLIENTS
WORKING PRESSURE

PART NO. _____

MAX	PSI	AT	PSI
SHELL	PSI	AT	PSI
TUBES	PSI	AT	PSI
MIN	PSI	AT	PSI
SHELL	PSI	AT	PSI
TUBES	PSI	AT	PSI
SERIAL	10243	YEAR	1999

P.O. NO. 45000050106

TUBES DESIGN BY OTHERS

MEMT -20°F AT 1V & 200PSI

MAX WP 1V & 200PSI AT 400°F