

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

JOB NO. 98762

1. Manufactured and certified by Manning & Lewis Engineering Company 675 Rahway Ave., Union, NJ 07083
(Name and address of Manufacturer)
2. Manufactured for MCNEIL SPECIALTY PRODUCTS CO. 1500. W 3RD STREET CLEVELAND, OH. 44113 USA.
(Name and address of Purchaser)
3. Location of installation MCNEIL SPECIALTY PRODUCTS, HIGHWAY 43 & INDUSTRIAL ROAD, MCINTOSH, ALABAMA 36553
(Name and address)
4. Type: Horizontal Heat Exchanger 17351 C-23807-1 8884 1999
(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 1995, A97
Edition and Addenda (date) Code Case No. Special Service per UG-120(d)
- 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): 2 (b) Overall length (ft & in.): 11 FT-9 1/2 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
2	30"	5' 10 3/4"	SA-516-70		3/8"	1/8"	1	None	70%	1	None	70%		

(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	Conical	Hemispherical	Flat	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle	Ratio	Apex Angle	Radius	Diameter	Convex	Concave	Type	Full, Spot, None	Eff.
(a)														
(b)														

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

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

If bar, give dimensions _____ If bolted, describe or sketch _____
9. MAWP 140 psi at max temp. 350 °F Min. design metal temp. 20 °F at 140 psi
(internal) (external) (internal) (external)

10. Impact test NO: UCS-66(a), UHA-51(d)
(Indicate yes or no and the component(s) impact tested)

11. Hydro., pneu., or comb. test press. 210 Proof test _____
Items 12 and 13 to be completed for tube sections

12. Tubesheet SA-240-304L 31 1/4" 1 3/8" 0 Welded
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 SA-249-304L 3/4" 16 GA. 633 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 inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell (a) No. of course(s): 1/1 (b) Overall length (ft & in.): 2 FT-3 7/16 IN/ 0 FT-9 1/16

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	30"	2' 3 7/16"	SA-240-304L		1/4"	0	1	None	70%					
1	30"	0' 9 1/16"	SA-240-304L		1/4"	0	1	None	70%					

15. Heads (a) SA-240-304L (b) _____

(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	Conical	Hemispherical	Flat	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle	Ratio	Apex Angle	Radius	Diameter	Convex	Concave	Type	Full, Spot, None	Eff.
(a) End		1.2453	0						29 1/2"		Flat			
(b) End		1.2453	0						29 1/2"		Flat			

If removable, bolts used (describe other fastening) _____
SA 193 B7; 5/8-11; 36
(Mat'l Spec. No., Grade, Size, No.) RR 1026.10

16 MAWP 110 psi at max. temp. 350 °F Min. design metal temp. 20 °F at 110 psi.

(internal) (external) (internal) (external)

17. Impact test NO: UC3-66(a), UHA-51(d)

(Indicate yes or no and the component(s) impact tested)

18. Hydro., pneu., or comb. test press. 184

Proof test

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	Flange	
Inlet/Outlet	2	6"	CL150FLG.	SA106-B SMLS	SA105	.280	1/8"	SA-516-70	UW16.1(d)	2-4(3)	
Vent/Drain	2	3/4"	THDDCPLG	SA-105		3000#	1/8"		UW16.1(d)		
Inlet	1	12"	CL150FLG.	SA312-304L	SA105	.375	0	SA-240-304L	UW16.1(d)	2-4(3)	
Outlet	1	3"	CL150FLG.	SA312-304L	SA182F 304L	.216	0	SA-240-304L	UW16.1(d)	2-4(3)	
Vent	1	1"	CL150FLG.	SA312-304L	SA182F 304L	.133	0		UW16.1(d)	2-4(3)	
Drain	1	3/4"	THDDCPLG	SA182F-304L		3000#	0		UW16.1(d)		

20. Supports: Skirt No Lugs Legs 2 Others Attached Welded to Shell
(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: 30-144 DSDA CONCENTRATOR CONDENSER WITH COLLING WATER IN SHELL & CYCLOHEXANE, DMF, H2O IN TUBES.

SAFETY DEVICE PROVIDED BY OTHERS

UG-46a

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. 1574 Expires 3/31, 20 01

Date APR 09 1999

Name Manning & Lewis Engineering Company

Signed

Kurt Shelan
(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 Hartford Steam Boiler Inspection & Insurance Co. of Hartford, CT have inspected the pressure vessel described in this Manufacturer's Data Report on APR 09 1999, 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 APR 09 1999 Signed [Signature]

(Authorized Inspector)

Commissions NB 7050AB, NJ 476
(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 , 20

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.)