

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

#95291

1. Manufactured by Miller Exchangers, Inc., 111 East Hwy. 64, Sand Springs, Okla. 74063
(Name and address of manufacturer)

2. Manufactured for Olin Corporation, P.O. Box 2896, Lake Charles, Louisiana 70602
(Name and address of purchaser)

3. Location of installation Olin Corporation, Interstate 10 West of Lake Charles, Louisiana 70602
(Name and address)

4. Type Horiz. Vessel No. J-913-1 J-913-1 631 Year Built 1981
(Horiz. or vert. tank) (Mfr's Serial No.) (CRN) (Drawing) (Nat'l Bld No.)

5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 and Addenda to 12-80 and Code Case no. 1980
(Date) (Year)

Special service per UG-120(d) _____

Manufacturers' Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: _____
(Name of part, item number, mfr's name and identifying stamp)

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

6. Shell: Material SA-516-70 Nom. Thickness 3/8 in. Corrosion Allowance 1/8 in. Diam. 2 ft. 1 3/4 in. Length 19 ft. 9 1/8 in.
(Spec. No., Grade) (Overall)

7. Seams: Longitudinal DBL R.T. Spot Efficiency 85% H.T. Temp 1150F Time 1 hr Girth DBL R.T. Spot No. of Courses 2
(DBL, Sngl.) (Spot or Full) (DBL, Sngl.) (Spot, Partial or Full)

8. Heads: (a) Material _____ (b) Material _____
(Spec. No., Grade) (Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)										
(b)										

If removable, bolts used (describe other fastenings) _____
(Material, Spec. No., Gr., Size, No.)

9. Type of Jacket _____ Proof Test _____

10. Jacket Closure _____ If bar, give dimensions _____ If bolted, describe or sketch.
(Describe as spec. & weld, bar, etc.)

11. Constructed for max. allowable working pressure 50 psi at max. temp. 245 F Min. temp. (when less than -20 F) _____ F.
Hydrostatic, pneumatic, or combination test pressure 75 psi.

Items 12 and 13 to be completed for tube sections

(2) 12. Tubesheets: Stationary Material SA-516-70 Diam. 25 1/2 in. Nominal Thick. 1 1/2 in. Corrosion Allow. 3/16 in. Attachment Welded
(Spec. No., Gr.) (Subject to pressure) (Welded, Bolted)

Floating Material _____ Diam. _____ in. Nominal Thick. _____ in. Corrosion Allow. _____ in. Attachment _____
(Spec. No., Gr.)

13. Tubes: Material SA-214 O.D. 3/4 in. Nominal Thickness .060 MIN in. or gauge Number 531 Type Straight
(Spec. No., Gr.) (Straight or "U")

Items 14-17 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers

(2) 14. Shell: Material SA-516-70 Nominal Thickness 3/8 in. Corrosion Allowance 1/16 in. Diam. 2 ft. 1 3/4 in. Length 1 ft. 5 1/16 in.
(Spec. No., Gr.)

(2) 15. Seams: Longitudinal DBL R.T. Spot Efficiency 85% H.T. Temp 1150F Time 1 hr Girth DBL R.T. Spot No. of courses 1
(DBL, Sngl.) (Spot or Full) (DBL, Sngl.) (Spot, Partial or Full)

(2) 16. Heads: (a) Material SA-516-70 (b) Material _____
(Spec. No., Grade) (Spec. No., Grade)

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(2) (a)	<u>CH. COV.</u>	<u>2 3/16"</u>	<u>1/16</u>						<u>29 7/8 O.D.</u>	
(b)										

If removable, bolts used (describe other fastenings) SA-193-B7 48 3/4" X 6" LG. STUDS
(Material, Spec. No., Gr., Size, No.)

17. Max. allowable working pressure 100 psi at max temp. 200 F. Min. temp. (when less than -20F) _____ F.
Hydro. pneu. or comb. test pressure 150 psi.

Items below to be completed for all vessels where applicable

18. Safety Valve Outlets: Number _____ Size _____ Location See UG 125, Note 34

This form may be obtained from the National Board of Boiler and Pressure Vessel Inspectors, 1055 Crupper Ave., Col's., O. 43228
Rev. 4

FORM U-1 (BACK)

19. Nozzles:

Purpose (Inlet, Outlet, Drain)	Number	Diam. or Size	Type	Material	Nominal Thickness	Reinforcement Material	How Attached
Shell In & Out	2	6" RF-SO	Pipe	SA-106-B	.432"	Weld	Welded
Chan. In & Out	2	6" RF-SO	Pipe	SA-106-B	.500"	Weld	Welded
T.W.	1	1" RF-SO	Pipe	SA-106-B	.400"	Weld	Welded
Drain	4	1" RF-SO	Pipe	SA-106-B	.358"	Weld	Welded

20. Inspection Openings:

Manholes No. _____ Size _____ Location _____
 Handholes No. _____ Size _____ Location _____
 Threaded No. _____ Size _____ Location _____

21. Supports: Skirt _____ Lugs _____ Legs _____ Other _____ Saddles _____ Attached _____ Welded to Shell _____
 (Yes or no) (No) (Describe) (Where and how)

22. Remarks: P.O. # 526P-54001 Item: E-215 Size: 25-240
 Type: CEN Service: Amine Cooler

CERTIFICATE OF 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.

Date 11-23-81 Signed Miller Exchangers, Inc. by *[Signature]*
 (Manufacturer)

"U" Certificate of Authorization No. 11532 expires May 22, 1984

CERTIFICATE OF SHOP INSPECTION

Vessel made by Miller Exchangers, Inc. at Sand Springs, Okla.

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Oklahoma and employed by H.S.B. I & I. Co.

of Hartford, Conn. have inspected the pressure vessel described in this Manufacturers' Data Report on 11-24, 1981, 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 the Manufacturers' 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 11-24-81 Signed *[Signature]* Commissions NB 8748
 (Inspector) (Nat'l Board, State, Province and No.)

CERTIFICATE OF COMPLIANCE FOR FIELD WORK

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.

Date _____ Signed _____ by _____
 (Manufacturer) (Representative)

"U" Certificate of Authorization No. _____ expires _____, 19 _____

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 Manufacturers' 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 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 Manufacturers' 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 _____ Commissions _____
 (Authorized Inspector) (Nat'l Board, State, Province and No.)

FORM R-1 REPORT OF WELDED REPAIR
in accordance with provisions of the National Board Inspection Code

1. Work performed by METALFORMS, INC. (name of repair organization) 25 (Form R. No.)
160 GARTH ROAD, CHEEK, TX 77705 (address) 12685 MI job no.

2. Owner LYONDELL CHEMICAL COMPANY (name)
CENTRAL WAREHOUSE, I-10 WEST, LAKE CHARLES, LA 70602 (address)

3. Location of installation LYONDELL CHEMICAL COMPANY (name)
CENTRAL WAREHOUSE, I-10 WEST, LAKE CHARLES, LA 70602 (address)

4. Unit identification HEAT EXCHANGER (boiler, pressure vessel) Name of original manufacturer MILLER EXCHANGERS, INC.

5. Identifying nos.: J-913-1 (mfg serial no.) 631 (National Board No.) ----- (jurisdiction no.) E-215 (other) 1981 (year built)

6. NBIC Edition/Addenda: 1998 Original Construction Code: ASME VIII DIV 1 (incl. edition and addenda)

7. Description of work: (use supplemental sheet, Form R-4, if necessary)
STRIP AND RETUBE FIXED TUBESHEET SHELL AND TUBE BUNDLE WITH (531) 0.750" OD X 16(AW) X 20'0" LG SA-789-S31803 WELDED NEW TUBES. RENEW TUBESHEETS WITH NEW SA-240-S31803 MATERIAL. SPOT RADIOGRAPH. REUSE ALL OTHER EXISTING PRESSURE PARTS.

TUBESIDE TEST 150 PSI SHELLSIDE Pressure Test, If applied 75 psi

8. Replacement Parts. Attached are Manufacturer's Partial Data Reports or Form R-3s properly completed for the following items of this report:
NONE

(name of part, item number, data report type, mfr's name and identifying stamp)

9. Remarks:
NONE

Donald Popielarsky CERTIFICATE OF COMPLIANCE
I, Donald Popielarsky, certify that to the best of my knowledge and belief the statements in this report are correct and that all material, construction, and workmanship on this Repair conforms to the National Board Inspection Code.
National Board "R" Certificate of Authorization No. R2794 expires on 06/08, 2001
Date 5-4, 1999 Metalforms, Inc. Signed Donald Popielarsky
(name of repair organization) (authorized representative)

Lloyd Asher CERTIFICATE OF INSPECTION
I, Lloyd Asher, holding a valid Commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of Texas and employed by H.S.B.I. & I. Co. of Hartford, CT. have inspected the work described in this report on 5-4, 99 and state that to the best of my knowledge and belief this work complies with the applicable requirements of the National Board Inspection Code.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning the work described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.
Date 5-4-99 Signed Lloyd Asher Commissions N.B. A8510
(Inspector) (National Board (incl. endorsements), and jurisdiction, and no.)