

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

1. Manufactured and certified by Kopetz Mfg., Inc., 1500 N. Country Club Road, Decatur, IL 62521-1899
(Name and address of Manufacturer)

2. Manufactured for Bayer Corporation, Pittsburgh, PA
(Name and address of Purchaser)

3. Location of installation Bayer Corporation, Rushy Park, SC
(Name and address)

4. Type: Horiz. Heat Exchanger 98101
(Horiz., vert., or sphere) (Tank, separator, jkt. vessel, heat exch., etc.) (Mfg's serial No.)

--- L98-101-A Rv. 4 1587 1998
(CRN) (Drawing No.) (Net'l. Ed. No.) (Year built)

5. ASME Code, Section VIII, Div. 1 1995; A96 --- ---
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): 3 (b) Overall length (ft & in.): 17'-7-1/8"

Course(s)			Material		Thickness IN		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	44 OD	6'-0"	SA-240-316L		3/8	1/16	1	Spot	85%	1	None	70%	---	---
2	44 OD	6'-0"	SA-240-316L		3/8	1/16	1	Spot	85%	1	None	70%	---	---
3	44 OD	5'-7-1/8"	SA-240-316L		3/8	1/16	1	Spot	85%	1	None	70%	---	---

7. Heads: (a) SA-240-316L; No H.T. (b) ---
(Met'l Spec. No., Grade or Type) H.T. - Time & Temp. (Met'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)	Rt. End	3/8	1/16	---	---	2:1	---	---	---	No	Yes	N/A	None	85%
(b)	---													

If removable, bolts used (describe other fastening) ---

(Met'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 150 15 psi at max. temp. 400 400 °F Min. design metal temp. -20 °F at 15 Ext. psi. 150 Int.

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

10. Impact test No; exempt per UHA-51(d)
(Indicate yes or no and the component(s) impact tested)

11. Hydro., pneu., or comb. test press. 225 psi Proof test ---

Items 12 and 13 to be completed for tube sections.

12. Tubesheet: SA-240-316L 43-3/8 3 1/16" both sides Bolted to both sides
Stationary (Met'l Spec. No.) Dia., in. (subject to press.) Nom. thk., in. Corr. Allow., in. Attachment (welded or bolted)

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Floating (Met'l Spec. No.) Dia., in. Nom. thk., in. Corr. Allow., in. Attachment

13. Tubes: SA-249-TP316L 1 .083 391 U
Met'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.): 2'-0"

Course(s)			Material		Thickness IN		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	44 OD	2'-0"	SA-240-316L		3/8	1/16	1	Spot	85%	N/A	None	85%	---	---

15. Heads: (a) SA-240-316L; No H.T. (b) ---
(Met'l Spec. No., Grade or Type) H.T. - Time & Temp. (Met'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)	Left End	2-13/16	1/16	---	---	---	---	---	OD=48-7/8	Inner side	N/A	None	100%	
(b)	---													

If removable, bolts used (describe other fastening) Studs=(96) 3/4"-10 NC, SA-193-B7, Nuts=(192) 3/4"-10 NC, SA-194-2H
(Met'l Spec. No., Grade, size, No.)

FORM U-1 (Back)

16. MAWP 150 --- --- psi at max. temp. 400 --- --- °F. Min. design metal temp. -20 --- --- °F at 150 Int. --- --- psi.

17. Impact test No; exempt per UHA-51(d) (Indicate yes or no and the component(s) impact tested)

18. Hydro., pneu., or comb. test press. 240 psi Proof test ---

19. Nozzles, inspection, and safety valve openings: LEGEND: [1]=SA-312-TP316L [2]=SA-182-F316L [3]=SA-240-316L

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Flange Type	Material		Nozzle Thickness		Reinforcement Material	How Attached		Location (Shop, Open.)
				Nozzle	Flange	Mon.	Corr.		Nozzle	Flange	
Misc.	6	NPS 2"	150#WN	[1]	[2]	Sch 160	1/16"	---	Welded	Welded	S/Shell, Sump
Level Control	2	NPS 3"	150#SO	[1]	[2]	Sch 80	1/16"	---	Welded	Welded	Sump
Outlet	1	NPS 6"	150#SO	[1]	[2]	Sch 80	1/16"	[3]	Welded	Welded	S/Shell
SG Cleanout	3	NPS 6"	150#PAD	---	[3]	2-1/2"	1/16"	Inherent	---	Welded	S/Shell, Sump
Liquid I/O	2	NPS 8"	150#WN	---	[2]	7/8"	1/16"	Inherent	---	Welded	S/Shell
Vapor Inlet	1	24" OD	150#SO	[3]	[2]	3/8"	1/16"	[3]	Welded	Welded	S/Shell
		30" OD		[3]	---	5/16"	1/16"	[3]	Welded	---	S/Shell

20. Supports: Skirt No (Yes or no) Lugs 0 (No.) Legs 0 (No.) Others (2) Saddles (Describe) Attached Welded to shellside (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: Safety valve provided by others.

Contents and use are unknown to fabricator

* At bottom of sump is a 1/4" min. 30" OD 2"1 elliptical head, SA-240-316L

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. 14276 Expires Nov. 10, 19 98

Date 9-23-98 Name Kopetz Mfg., Inc. (Manufacturer) Signed David J. Burton (Representative)

CERTIFICATE OF SHOP 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 Illinois and employed by The Hartford Steam Boiler Inspection & Insurance Co., Hartford, CT. have inspected

the pressure vessel described in this Manufacturer's Data Report on 9-18, 19 98, 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 9/23/98 Signed [Signature] (Authorized Inspector) Commissions NB928/AB IL1208 (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 _____, 19 _____

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/or 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.)