

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 KAM THERMAL EQUIPMENT LTD. 98-21 - 97th AVENUE OZONE PARK, NEW YORK 11416
(Name and address of manufacturer)
2. Manufactured for AMERICAN HOECHT CORP. COVENTRY, R.I.
(Name and address of purchaser)
3. Location of installation _____
(Name and address)
4. Type HORIZONTAL 6609 6-0462-ST 741 1986
(Horiz or vert tank) (Mfg's serial No) (CRN) (Drawing) (Nat'l Bd No) (Year built)
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 1983
Year

Addenda (date) _____ Code Case No _____ Special service per UG-120 (d) _____
Items 6-11 incl. to be completed for single wall vessels, jackets of jackets of jacketed vessels, or sheets of heat exchangers.

6. Shell: SA-312 T-316 .120 C 4" 8' 2 1/2"
Matl (Spec No, Grade) (Nom Thk (in)) (Corr Allow (in)) (Diam I D (ft & in)) (Length (Overall) (ft & in))
7. Seams: WELDED DBL RT 70% 1
Long (Dbl, Sngl) (R T (Spot or Full)) (Eff (%) (H T Temp (°F))
Time (Girth (Dbl, Sngl)) (R T (Spot, Partial, or Full)) (No. of Courses)

8. Heads: (a) Matl. _____ (Spec No, Grade)		(b) Matl. _____ (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) _____ (Matl 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 ogee & weld bar, etc.)

11. MAWP 90 psi at max. temp. 390 °F. Min. temp. (when less than -20° _____ °F.
Hydro., pneu., or comb. test press. 135 psi.

Items 12 and 13 to be completed for tube sections

12. Tubesheets: SA-240 T-316 4" 3/4 C WELDED
Stationary Matl (Spec No., Gr) (Diam (in) (Subject to pressure)) (Nom Thk (in)) (Corr Allow (in)) (Attach (Welded, Bolted))
Floating Matl (Spec No., Gr) (Diam (in)) (Nom Thk (in)) (Corr Allow (in)) (Attach)
13. Tubes: SA-249 T-316 3/4 18 STRAIGHT
Matl (Spec No Gr) (OD (in)) (Nom Thk (in or Gauge)) (Number) (Type (Straight or U))

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

14. Shell: _____
Matl (Spec No, Grade) (Nom Thk (in)) (Corr Allow (in)) (Diam I D (ft & in)) (Length (Overall) (ft & in))
15. Seams: _____
Long (Dbl, Sngl) (R T (Spot or Full)) (Eff (%) (H T Temp (°F))
Time (Girth (Dbl, Sngl)) (R T (Spot, Partial, or Full)) (No. of Courses)

16. Heads: (a) Matl. SA-403 & SA-182 T-316 (b) Matl. SA-403 & SA-182
(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)	END	.120	0							CONCAVE
(b)	END	.120	0							CONCAVE

If removable, bolts used (describe other fastenings) T-304 SA-193-B-8; 5/8"; 4 (Matl, Spec No., Gr., Size, No)

17. MAWP 90 psi at max. temp. 390 °F. Min. temp. (when less than -20° _____ °F.
Hydro., pneu., or comb. test press. 135 psi.

Form U-1 (Back)

18. Nozzles, Inspection and Safety Valve Openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diam. or Size	Type	Matl.	Nom. Thk.	Reinforcement Matl.	How Attached	Location
INLET	1	1½	S.O.F.	SA-182			WELDED	RONNET
OUTLET	1	1½	S.O.F.	"			"	RONNET
INLET	1	2	S.O.F.	"			"	SHELL
OUTLET	1	2	S.O.F.	"			"	"
DRAIN	1	1½	S.O.F.	"			"	"
VENT	1	3/4	OTLG.	SA-182			WELDED	SHELL

19. Supports: Skirt _____ Lugs _____ Legs _____ Other SADDLES Attached SHELL & WELDED
(Yes or no) (No) (No) (Describe) (Where and how)

20. Remarks: Manufacturer's 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)

UNIT TO BE USED AS A HEAT EXCHANGER

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. 892 expires Aug. 19, 19 1988
Date 7/16/86 Co. name KAM THERMAL EQUIP. LTD. Signed Julius Rayhan
(Manufacturer) (Representative)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by KAM THERMAL EQUIP. LTD. at OZONE PARK, NEW YORK

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 COMMERCIAL UNION CO.

of NEW YORK have inspected the pressure vessel described in this Manufacturer's Data Report on 7/16/86, 19 _____, 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 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 7/16/86 Signed David W. Shrago NEW YORK STATE COMMISSION # 2360
(Authorized Inspector) (Nat'l Board, State, Province and No.)

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the field assembly construction of all parts of this vessel conforms with the requirements of Section VIII, Division 1 of the ASME Boiler and Pressure Vessel Code.

"U" Certificate of Authorization No. _____ expires _____, 19 _____
Date _____ Co. name _____ Signed _____
(Assembler that certified and constructed field assembly) (By 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 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 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 _____ Commissions _____
(Authorized Inspector) (Nat'l Board incl. endorsements), State, Prov., and No.)

5.125

4.025

8

8

4

22.5

47

77.5

98.675 TUBESHEETS FACE TO FACE

98.125

C.G.

FRONT

REAR

SIDE VIEW

A

B

C

D

E

K

A. Taylor 9/2/86

TO THE HONORABLE SENATE

COMPONENT		Q. D.	TKS.	MATERIALS OF CONSTRUCTION		DESIGN SPECIFICATIONS			
NOZZLE A	1.9	0.065	150 # ANSI S. O.	FLG SA-240 WITH SA-312 TP316 WLD HI ALLOY PIPE			SHELL SIDE	TUBE SIDE	
NOZZLE B	1.9	0.065	150 # ANSI S. O.	FLG SA-240 WITH SA-312 TP316 WLD HI ALLOY PIPE	DESIGN PRESSURE	psig	90	90	
NOZZLE C	2.375	0.065	150 # ANSI S. O.	FLG SA-240 WITH SA-312 TP316 WLD HI ALLOY PIPE	TEST PRESSURE	psig	CODE	CODE	
NOZZLE D	1.9	0.065	150 # ANSI S. O.	FLG SA-240 WITH SA-312 TP316 WLD HI ALLOY PIPE	DESIGN TEMPERATURE	F	390	390	
NOZZLE E	2.375	0.065	150 # ANSI S. O.	FLG SA-240 WITH SA-312 TP316 WLD HI ALLOY PIPE	NUMBER OF PASSES		1	1	
COUPLING K	0.75		3000 # HALF LENGTH SA-182 F316 HI ALLOY STEEL COUPL		CORROSION ALLOWANCE	in	0.0	0.0	
					RADIOGRAPHING		NONE	NONE	
SHELL CYLINDER	4.5	0.12	SA-312 TP316 WLD HI ALLOY PIPE		TEMA TYPE	BEM	SIZE 4-100	AREA 10 ft ²	
HEAD CYLINDERS	4.5	0.125	SA-182 GR F11 ALLOY STEEL FORG		TUBE TYPE	BARE	# HOLES 6	LENGTH 100 in	
HEAD COVERS	4.5	0.125	SA-182 GR F11 ALLOY STEEL FORG		LAYOUT	0.9375 in TRI	TUBE-TS JOINT	EXPANDED	
TUBESHEETS	8.25	0.625	SA-240 GR 316 HI ALLOY STEEL PLT		BAFFLE TYPE	SINGLE SEGMENTAL	CUT 50 % H	NO 3	
HEAD FLANGES AT TBSHTS	8.25	0.625	SA-240 GR 316 HI ALLOY STEEL PLT RING FLANGE		BAFFLE SPACING (C-C)	25.0	AT INLET	24.375 in	
HEAD GASKETS AT TBSHTS	5.625	0.125	SA-193 B8 CL. 1 (304) HI ALLOY STEEL BLT 4 BOLTS ON 6.75 in B.C.		IMPINGEMENT PROTECTION	NONE			
HEAD BOLTING AT TBSHTS	0.625		SA-193 B8 CL. 1 (304) HI ALLOY STEEL BLT 4 BOLTS ON 6.75 in B.C.		CODE	ASME SEC. VIII DIV. 1	TEMA CLASS		
TUBES	0.75	0.049	SA-249 TP316 WLD HI ALLOY TUBE BARE TUBES		WEIGHT EMPTY	183	FULL 235	BUNDLE 76 lb	
BAFFLES	4.1875	0.125	SA-240 GR 316 HI ALLOY STEEL PLT		DRAWN BY	CKD BY	APVD BY		
SHELL SUPPORTS		0.375	SA-240 GR 316 HI ALLOY STEEL PLT		KAM THERMAL EQUIPMENT, LTD.				
					OZONE PARK, NEW YORK				
					AMERICAN HOECHST CORP				
					COVENTRY R.I.				
					P.C.-508191				
					DATE-4-17-86				
					DWG.-B6462ST				
			ITEM-B312						