

114213

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 ALLOY FAB, INC., 200 RYAN STREET, SOUTH PLAINFIELD, NJ
(Name and address of manufacturer)
2. Manufactured for AMERICAN HOECHST CORPORATION, COVENTRY, RHODE ISLAND
(Name and address of purchaser)
3. Location of installation AMERICAN HOECHST CORPORATION, COVENTRY, RHODE ISLAND
(Name and address)
4. Type VERT. TANK 2890 --- D-1711 1758 1986
(HORIZ. or VERT. tank) (Mfr'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
- WINTER, 1985 --- ---
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, or sheets of heat exchangers

6. Shell: SA-240-316L .125 --- --- ---
Mat'l (Spec No., Grade) Nom. Thk (in.) Corr. Allow. (in.) Diam. I.D. (ft & in.) Length (Overall) (ft & in.)
- 3" HALF PIPE COIL
7. Seams: FILLET --- --- --- ---
Long (Dbl., Sngl.) R.T. (Spot or Full) Eff. (%) H.T. Temp. (F)
- FILLET --- --- ---
Time Girth (Dbl., Sngl.) R.T. (Spot, Partial, or Full) (18) TURNS @ 4 1/2" No. of Courses

8. Heads: (a) Mat'l. SA-312-316L (Spec. No., Grade) (b) Mat'l. --- (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)	BOTTOM	.120"	---	1.75"	---	---	---	---	---	CONCAVE
(b)										

If removable, bolts used (describe other fastenings) WELDED TO HEAD

(Mat'l. Spec. No., Gr., Size, No.)

9. Type of Jacket 3" HALF PIPE COIL (5) TURNS @ 4 1/2" Proof Test UG-101 (a)
10. Jacket Closure PLATE WELDED If bar, give dimensions --- If bolted, describe or sketch.
(Describe as edge & weld, bar, etc.)
11. MAWP 90 psi at max. temp. 390 °F. Min. temp. (when less than -20°F) --- °F.
Hydro., pneu., or comb. tes. press. 137 psi.

Items 12 and 13 to be completed for tube sections

12. Tubesheets: --- --- --- --- ---
Stationary Mat'l (Spec. No., Gr.) Diam. (in.) (Subject to pressure) Nom. Thk (in.) Corr. Allow. (in.) Attach (Welded Bolted)
- --- --- --- ---
Floating Mat'l (Spec. No., Gr.) Diam. (in.) Nom. Thk (in.) Corr. Allow. (in.) Attach
13. Tubes: --- --- --- --- ---
Mat'l (Spec. No., Gr.) O.D. (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: SA-240-316L .3125 0 6'-0" O.D. 8'7"
Mat'l (Spec. No., Grade) Nom. Thk (in.) Corr. Allow. (in.) Diam. I.D. (ft & in.) Length (Overall) (ft & in.)
15. Seams: WELDED DBL. BUTT SPOT .85 ---
Long (Dbl., Sngl.) R.T. (Spot or Full) Eff. (%) H.T. Temp. (F)
- WELDED DBL. BUTT PARTIAL 1
Time Girth (Dbl., Sngl.) R.T. (Spot, Partial, or Full) No. of Courses
16. Heads: (a) Mat'l. SA-240-316L (Spec. No., Grade) (b) Mat'l. --- (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)	TOP &	.375	---	66"	4.75"	---	---	---	---	CONCAVE &
(b)	BOTTOM	---	---	---	---	---	---	---	---	CONVEX

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

(Mat'l. Spec. No., Gr., Size, No.)

17. MAWP F.V./90 psi at max. temp. 390 °F. Min. temp. (when less than -20°F) --- °F.
Hydro., pneu., or comb. test press. 137 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
MANWAY	1	20"	RING	SA-240-316L	.25"	---	WELDED	TOP HEAD
SIGHT GLASS	1	6"-150#	PAD	SA-240-316L	1.1875"	---	WELDED	---
PROCESS	1	14"-150#	S.O.	SA-240-316L	.375"	---	WELDED	---
PROCESS	1	8"-150#	S.O.	SA-240-316L	.375"	---	WELDED	---
PROCESS	6	4"-150#	S.O.	SA-312-316L	SCH.40	---	WELDED	---
PROCESS	1	4"-150#	PAD	SA-240-316L	1.1875"	---	WELDED	---
PROCESS	6	2"-3000#	C'PLG	SA-182F-316L	TH'D.	---	WELDED	---
PROCESS	1	3/4"-3000#	C'PLG	SA-182F-316L	TH'D.	---	WELDED	---

19. Supports: Skirt NO Lugs --- Legs --- Other RING Attached WELDED TO SHELL W/GUSSETS
(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, shop's name and identifying stamp)

1500 GALLON H.P.C.J. CRYSTALLIZER
P.O. # 507612 ITEM # B419

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. 7130 expires JANUARY 31, 19 87

Date 6-21-86 Co. name ALLOY FAB, INC. Signed Paul Hunt
(Manufacturer) (Representative)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by ALLOY FAB, INC., 200 RYAN STREET, SOUTH PLAINFIELD, NJ 07080

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 COMMERCIAL UNION INSURANCE COMPANY of BOSTON, MASSACHUSETTS

Report on 6-23-86, 19 86, 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 6-23-86 Signed Donald H. Hager Commissions 6058 NJ-372
(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 State, Province and No.)

KDN.POS: Pos.400 409 419

AGITATOR SPECIFICATION:
=====

BN:511.44202.00

Type EM 100 D

The design is based on the following operating conditions:

PRODUKT DATA:

Density 1300 kg/m³
Viscosity 100 mPa s

VESSEL DATA:

Volume 7,17 m³
Diameter 1800 mm
Overall height 3300 mm
Filling height 2950 mm
Bottom shape dished
Lid shape dished

PROCESS DATA:

Working temperature: 140 degrees
Celsius
Working pressure (absolute): 1 bar

The agitator is designed to operate at any liquid surface and can therefore be operated during charging and discharging of the vessel.

ELECTRIC MOTOR = to be provided by customer
IEC size 160L

P = 13,50 kW, n = 1752 min⁻¹,
power supply 3x440 V, 60 cycl.
direct switching, protection class IP 54 EExeIIT3
insulation class B, construction form V1
max ambient temp. = 40 degrees Celsius.
Motor with protection cap.
Sense of rotation seen from drive to impellers: clockwise.

EKATO FLAT HELICAL GEAR REDUCER

with solid shaft, oil-dip-lubrication, without oil filling,
air-cooling

i = 20,17, n₂ = 87 min⁻¹

The EKATO -FLAT REDUCTOR SPUR GEAR manufactured in space saving
method of

construction is adapted to special requirements of agitators:
starting shock, dynamic load, transmission of occurring
forces. Utilizing casehardened and ground gears, a low noise run
can be achieved. The great depth of case and a hardness of

HRC 60-62 guarantee high resistance to wear for the wide teeth.

The elastic core makes them insensitive to shock loads. The modern designed gear housing - oil and dust-proof - is built for rough continuous operation and consists of high grade grey cast. The agitator drive is suitable for the transmission of all occurring forces.

AGITATOR BEARING:

rigid cast iron housing with tapered sleeve roller according to DIN 28162.

Bearing shaft made of mild steel, to product side of stainless steel DIN matl. no. 1.4571.

Bearing shaft with flange coupling 185 diameter, according to DIN 28155 incl. fixing elements.

Top connection of the bearing shaft pinion according to DIN 28154 for fixing of the splitted flange coupling.

Calculated life time of the antifriction bearing under consideration of the occurring radial and axial forces: Lh 90 more than 25.000 operating hours.

AGITATOR MOUNTING:

mounting flange, connecting dimensions to ANSI (ASA) B 16.5 for 14", 150 lb/sq.in, furnished without screws.

Design with raised face.

Material: mild steel, tankside clad with stainless steel DIN matl. no. 1.4571.

SHAFT SEALING: - lateral disassembly possible - air-cooled, double acting EKATO mechanical seal unit type RD 34-V.

Seal housing made of case hardened high alloy, seal rings product and atmospheric side made of sintered special carbon. Storage and expansion vessel for sealing liquid made of high alloy with 2 level indicators, ready for operation.

Cooling water connection on site.

Connecting pipes between storage vessel and sealing chamber made of stainless steel DIN matl. no. 1.4571.

Other tankside parts are made of stainless steel DIN matl. no. 1.4571.

O-rings product side made of Viton coated with PTFE atmospheric side made of Viton.

Sealing liquid: glycerol.

This mechanical seal has been developed especially for agitator operation with the following features:

Low maintenance - small leakage - long life span - high operational safety.

AGITATOR SHAFT:

Solid, L = 3100 mm, Dia. = 100 mm,

top connection with flange coupling 220 mm diameter,
smooth end.

Material: stainless steel DIN matl. no. 1.4571.

Safe agitator operation is guaranteed due to sufficient
distance between the operational speed and the natural
frequency of the agitator shaft..

IMPELLER:

3 EKATO-Interference flow-agitator INTERMIG, $d_2 = 1200\text{mm}$
(inland and international patents applied for)
inner blade down-thrust.

Mounted by means of special EKATO set screws on smooth
agitator shaft.

Distance between the centers of the impeller stages:
approx. 750 mm. Changes of distance only after prior contact
with EKATO.

Distance between vessel bottom and lowest point of the impeller
approx. 350 mm.

Material: stainless steel DIN matl. no. 1.4571.

Vessel opening required to pass impeller:
minimum 330 mm diameter.

SURFACE TREATMENT:

metallic parts being in contact with the product are glass
blasted and protected, shafts are ground.

The external components are protected with neutralizing
primer and DD-lacquer RAL RAL 6011.

AGITATOR ARRANGEMENT:

vertical in center of upright tank, on tank weld neck flange
14", 150 lb/sq.in, to be sufficiently reinforced.

Nozzle height: 150 mm.

VESSEL INSTALLATIONS:

In order to achieve a proper function of the agitator

2 baffles are essential:

length 2500 mm, width 140 mm, wall distance 40 mm, to be
provided on site.

MATERIALS:

The materials to product side have been selected as specified by
you.

TEST:

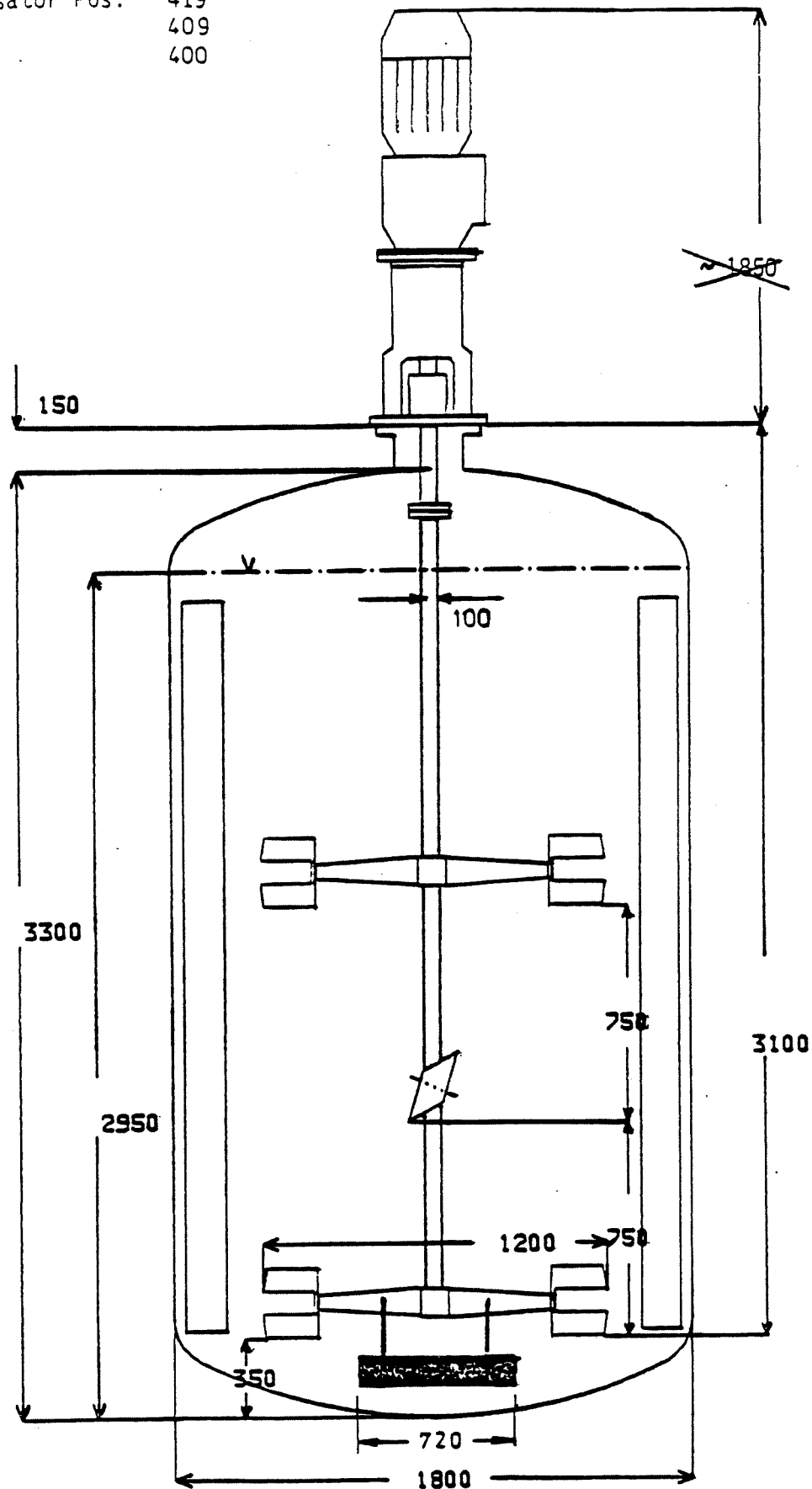
before shipment, the agitator undergoes a test in
our works.

EKATO

Norm-Rührwerk Typ
EM 100 D

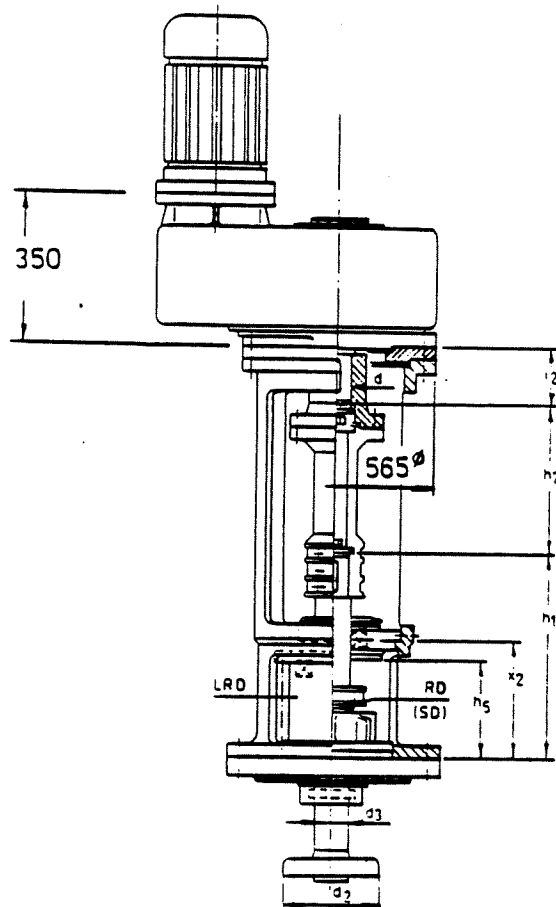
Massblatt BN:
511.44203.00

Kristallisator Pos. 419
409
400

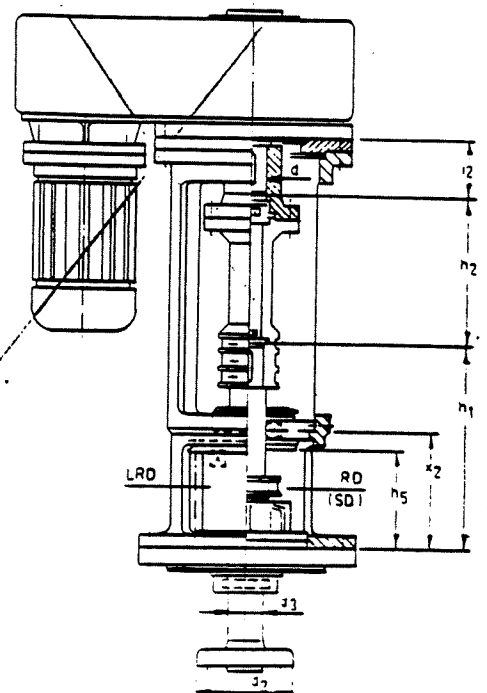


Dieses EKATO-Rührwerk
erlaubt den seitlichen Aus-
bau von Zwischenwelle,
Lagerung und Dichtung
ohne das Getriebe in seiner
Lage zu verändern.

EKATO



Flachgetriebe mit Motor V1



Flachgetriebe mit Motor V3

Typ	d_3	Abmessungen		J_2	b	c	d_2	h_D	h_5	x_2	h_2	h_1
	D	H_L										
HWL 040	250	735	332	24	80	110	250	233	262	294	385	
HWL 050	340	795	332	24	100	130	255	238	270	304	415	
HWL 060	395	835	332	24	120	145	270	243	277	324	425	
HWL 080	445	940	440	30	150	185	290	244	285	344	480	
HWL 100	565	1070	440	30	175	220	290	268	320	385	545	
HWL 125	830	1265	500	30	277	270	305	316	375	405	635	
HWL 140	830	1265	500	30	277	300	340	315	368	405	635	
HWL 160	1030	1370	500	30	280	340	340	340	398	440	705	
HWL 180	1030	1560	510	40	315	365	340	424	487	470	830	
HWL 200	1030	1560	510	40	315	400	340	411	481	470	830	
HWL 220	1030	1655	510	40	330	450	360	451	521	480	915	
HWL 240	1130	1920	520	50	370	500	380	548	625	480	1125	
HWL 260	1130	1920	520	50	370	550	380	536	619	480	1125	
HWL 280	1130	1980	520	50	380	590	395	510	608	480	1175	

d_3 = Durchmesser des Wellenendes