

#86164 1/2

FORM U-1A MANUFACTURERS' DATA REPORT FOR PRESSURE VESSELS
(Alternate Form for Single Chamber, Completely Shop-Fabricated Vessels Only)
as required by the provisions of the ASME Code rules, Section VIII, Division 1

1. Manufactured and certified by ASTRO METALLURGICAL, INC., 3225 LINCOLN WAY WEST, WOOSTER, OHIO, 44691
(name and address of manufacturer)
2. Manufactured for MONSANTO CO., 500 MONSANTO AVE., W.G. KRUMMRICH PLANT, SAUGET, IL 62206-1198
(name and address of purchaser)
3. Location of installation MONSANTO CO., 500 MONSANTO AVE., W.G. KRUMMRICH PLANT, SAUGET, IL 62206-1198
(name and address)
4. Type: vert. vessel 48048 --- A-48048-1 R.2 1561 1993
(horiz. or vert., tank) (mfr's. serial no.) (CRN) (drawing no.) (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 Code, Section VIII, Division 1: 1992
(year)
--- 2131 -----
(addenda (date)) (Code Case no.) (special service per UG-120(d))
6. Shell: SB-265-2 1 1/2" 0" 8'-6" 14'-8 1/2"
(mat'l. (spec. no., grade)) (nom. thickness (in.)) (corr. allow. (in.)) (dia. ID (ft. & in.)) (length (overall) (ft. & in.))
7. Seams: SNG FULL 100 --- --- SNG FULL 2
(long. (welded, dbl., sngl. lap, butt)) (RT (spot or full)) (eff. (%)) (HT temp. (*F)) (time (hr.)) (girth (welded, dbl., sngl. lap, butt)) (RT (spot, partial, or full)) (no. of courses)
- * 8. Heads: (a) SB-265-2 (b) SB-265-2
(mat'l. (spec. no., grade)) (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	.4254"	0"	--	--	2:1	--	--	--	CONCAVE
(b)	BOTTOM	.5866"	0"	--	--	--	45°	--	--	CONCAVE

If removable, bolts used (describe other fastenings): _____

(mat'l., spec. no., gr., size, no.)

- * 9. MAWP: Ev & 75 at max. temp. 300 Min design metal temp. -20 at 75 Hydro. neu. or comb. test pressure 157
(psi) (*F) (*F) (psi) (psi)

10. Nozzles, inspection and safety valve openings:

Purpose (inlet, outlet, drain, etc.)	No	Dia. or Size	Type	Mat'l.	Nom. Thickness	Reinforcement Mat'l.	How Attached	Location
MANWAY	1	18"	150-RFLJ	SB-265-2	3/8"	SB-265-2	WELDED	--
BLOW LINE	1	4"	150-RFLJ	SB-337-2	.237"	SB-265-2	WELDED	--
PI	1	2"	150-RFLJ	SB-337-2	.154"	INHERENT	WELDED	--
INLET	1	3"	150-RFLJ	SB-337-2	.216"	SB-365-2	WELDED	--

11. Supports: Skirt NO Lugs 4 Legs -- Other --- Attached SHELL/bolted
(yes or no) (no.) (no.) (describe) (where & how)

- * 12. Remarks: 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)

FOR REMARKS SEE U-4 ATTACHED.

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. 0.884 expires 1-8, 1995
Date 2/11/93 Name ASTRO METALLURGICAL, INC. Signed [Signature]
(manufacturer) (representative)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by ASTRO METALLURGICAL, INC at WOOSTER, OHIO
I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the state or province of Ohio and employed by The Hartford Steam Boiler Inspection and Insurance Company of Hartford, CT have inspected the component described in this Manufacturers' Data Report on 02-11, 1993 and state that, to the best of my knowledge and belief, the manufacturer has constructed this pressure vessel in accordance with the 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 02-11, 19 93 Signed [Signature] Commissions Nat'l Bd 8967, Ohio Comm.
(Authorized Inspector) (Nat'l. Bd. (incl. endorsements) state, prov. and no.)

FORM U-4 MANUFACTURERS' DATA REPORT SUPPLEMENTARY SHEET
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

2/2

1. Manufactured by ASTRO METALLURGICAL, INC., 3225 LINCOLN WAY WEST, WOOSTER, OHIO, 44691
(Name and address of manufacturer)

2. Manufactured for MONSANTO CO., 500 MONSANTO AVE., W.G. KRUMMRICH PLANT, SAUGET, IL. 62206-1198
(Name and address of purchaser)

3. Location of Installation MONSANTO CO., 500 MONSANTO AVE., W.G. KRUMMRICH PLANT, SAUGET, IL. 62206-1198
(Name and address)

4. Type vert. vessel Vessel Number 48048 --- A-48048-1 R.2 1561 Year Built 1993
Horiz. Vert. Tank, etc. Mfg. serial CRN Dwg. Nat'l. Brd. No.

Data Report
Item Number

Remarks

FROM LINE 8(b): 45 CONE HAS 22 1/2 CONE SECTION WELDED ON EACH END MAT'L. SB-265-2 DBL BUTT GIRTH SEAM, FULL R.T., 100% EFF. MIN. THK. OF CONE SECTIONS .5866". FROM LINE 9: UNIT HYDRO TESTED IN HORIZONTAL POSITION.

10 PURPOSE	ADDITIONAL NOZZLES						
	No.	SIZE	TYPE	MAT'L	THICKNESS	Reinf. Mat'l.	ATTACHED LOCATION
VENT	1	3"	150-RFL J	SB-337-2	.216"	SB-265-2	WELDED --
THERMOWELL	1	3"	150-RFL J	SB-337-2	.216"	SB-265-2	WELDED --
RELIEF	1	3"	150-RFL J	SB-337-2	.216"	SB-265-2	WELDED --
OUTLET	1	8"	150-RFL J	SB-265-2	5/16"	INHERENT	WELDED --
SPARE W/BLIND	1	3"	150-RFL J	SB-337-2	.216"	SB-265-2	WELDED --
VENT	1	2"	150-RFL J	SB-337-2	.154"	INHERENT	WELDED --
LEVEL	1	3"	150-RFL J	SB-337-2	.216"	SB-265-2	WELDED --

FROM LINE 18: ALL NOZZLE FLANGES ARE SA-105, SAFETY VALVES ARE SUPPLIED BY THE USER, THIS UNIT IS EXEMPT FROM IMPACT TESTING PER UNF-65.

Date 2/11/93 ASTRO METALLURGICAL, INC. Signed [Signature]
Manufacturer

Date 02-11-93 Authorized Inspector's Signature [Signature] Commissions Nat'l. Bd. 89676, Ohio Comm.
Nat'l. Board, State, Province and No.