

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

Form U-4

1. Manufactured and certified by ASTRO METALLURGICAL, INC. 3225 West Old Lincoln Way Wooster, Ohio, USA 44691

**FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS**

(Alternative Form for Single Chamber, Completely Shop-Fabricated Vessels Only)  
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

Pos#21470551

XTD23503 Form U-1A

1. Manufactured and certified by ASTRO METALLURGICAL, INC. 3225 West Old Lincoln Way Wooster, Ohio, USA 44691

(Name and address of Manufacturer)

2. Manufactured for FLUOR DANIELS, INC. AS AGENT FOR HOFFMANN-LA ROCHE, INC., P.O. BOX 950, MARLTON, NJ, 08053

(Name and address of Purchaser)

3. Location of Installation FLUOR DANIELS, INC., 206 ROCHE DRIVE, CONS. ENT., BELVIDERE, NJ, 07823

(Name and address)

4. Type VERTICAL 60603 — C-1203-D, R3 1757 1997  
(Horiz. or vert. tank) (Mfg'r'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 rules, Section VIII, Division 1 1995  
to 1995 — — (Year)

Addenda (Date) Code Case Nos. Special Service per UG-120 (d)

6. Shell: SB-265-2 1/4" 1/16" 4'-0" 8'-2 1/2"  
Mat'l. (Spec. No., Grade) Nom. Thk. (in.) Corr. Allow. (in.) Diam. ID (ft. & in.) Length (overall) (ft. & in.)

7. Seams: SNGL FULL 100% — — SNGL FULL 1  
Long (Welded, Dbl., Sngl., Lap, Butt) RT (Spot or Full) Eff. (%) H.T. Temp. (°F.) Time (hr.) Girth (Welded, Dbl., Sngl., Lap, Butt) RT (Spot, Partial or Full) No. of Courses

8. Heads: (a) Mat'l. SB-265-2 (b) Mat'l. SB-265-2  
(Spec. No., Grade) (Spec. No., Grade)

Location (Top, Bottom, Ends)	Min. Thickness mm	in	Corrosion Allowance mm	in	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
a) TOP	—	3/8"	—	1/16"	—	—	2:1	—	—	—	CONCAVE
b) BOTTOM	—	3/8"	—	1/16"	—	—	2:1	—	—	—	CONCAVE

If removable, bolts used (describe other fastenings) —

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

9. MAWP 25 psi at max. temp. 150 °F

Min. design metal temp. -20 °F at 25 psi. Hydro., ~~Pressure~~ test pressure 38 psi.

10. Nozzles, inspection and safety valve openings:

Purpose (Inlet, Outlet, Drain)	No.	Diameter or Size mm	in	Type	Material	Nom. Thickness	Reinforcement Material	How Attached	Location
HANDHOLE	1	—	10"	150-LJ	SB-265-2	1/4"	INHERENT	WELDED	—
SERVICE	2	—	8"	150-LJ	SB-265-2	1/4"	INHERENT	WELDED	—
SERVICE	1	—	6"	150-LJ	SB-337-2	.280"	INHERENT	WELDED	—
SERVICE	1	—	4"	150-LJ	SB-337-2	.237"	INHERENT	WELDED	—

11. Supports: Skirt NO Lugs — Legs 4 Other — Attached BOTTOM HEAD WELDED  
(yes or no) (No.) (No.) (Describe) (Where and how)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: NONE

(Name of part, item number, Mfg'r's. name and identifying stamp)

THIS UNIT IS EXEMPT FROM IMPACT TESTING PER UNF-65

**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. 10884  
expires JANUARY 8, 19 98.

Date: 6-18-97 Co. Name: ASTRO METALLURGICAL, INC.  
(Manufacturer)

Signed: James A. Hildner  
(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/or the State or Province of OHIO and employed by THE HARTFORD STEAMBOILER INSPECTION & INS CO have inspected the component described in this Manufacturer's Data Report on

6-18, 19 97, 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.

