



Primary Process Equipment

2000 GL	2000 gallon Pfaudler glasteel jacketed reactor rated at 90psi/FV. Variable frequency drive agitator, 200 ft ² Graphilor condenser.
1500 GL	1500 gal Pfaudler glasteel jacketed reactor rated at 100 psi/FV. Variable frequency drive agitator, 160 ft ² Karbate Condenser. Also with all glass overhead condensers.
1500 GL	1500 gallon Pfaudler glasteel jacketed reactor rated at 100 psi/FV, configured as a receiver.
1000 GL	1000 gal Pfaudler glasteel jacketed receiver rated at 100 psi/FV.
1500 SS	1500 gal 316 SS jacketed reactor rated 100 psi/FV, variable frequency drive agitator, 134ft ² condenser.
1000 SS	1000 gal 316 SS jacketed reactor rated at 100 psi/FV, VFD agitator, 86 ft ² condenser. Also with 6" diameter, 10ft packed column (1" DE-2 protruded packing), 34ft ² condenser and aftercooler, and 65 gallon product receiver.
500 C-22	500 gal Pfaudler Hastelloy C-22 reactor pressure rated at 150 psig/FV with variable frequency drive and 170 ft ² shell and tube Hastelloy C-22 condenser.
500 GL	500 gal glass lined steel processing vessel, 25 psi rated, agitated w/ VFD, jacketed with 45ft ² monolithic carbon block condenser.
50 GL	50 gal, glass lined steel, 25 psi rated agitated reactor with 15ft ² HE6 glass condenser. Also convertible for use as chlorinator.
30 GL Column	4" diameter column with 8 ft. of ceramic packing on 30 gal reboiler with 5ft ² condenser with automatic reflux splitter.
50 GL	50 gal, glass lined steel, 25 psi rated agitated reactor with 15ft ² HE6 glass condenser. Also convertible for use as chlorinator.
30 GL Column	4" diameter column with 8 ft. of ceramic packing on 30 gal reboiler with 5ft ² condenser with automatic reflux splitter.
WFE-2	14.13ft ² A. F. Smith 316 SS Wiped Film Evaporator.
WFE-3	14.2ft ² Pfaudler 316 SS Wiped Film Evaporator.(Back-up, not installed)
LUWA	1.4ft ² LUWA 316 SS Pilot Thin Film Evaporator.
50 GL	50 gal glasteel agitated evaporator.
Fume Scrubber	Countercurrent packed column fume scrubber – FRP & Polypropylene. (Capacity: 4000 CFM, 4ft Diameter, 15ft packed section, 700 gal reservoir)
Isolation Room	8' x 12' with direct vent to fume scrubber.
Packaging Hood	Bench top fume hood for toxic materials packaging.
Isolation Rooms	12.3ft ³ Patterson 316 SS Double Cone dryer/blender. 52ft ³ GEMCO Hastelloy C-276 double cone rotary dryer/blender. (Three separate suites. Each suite has its own once through HEPA filtered system to furnish conditioned air.)



Portable Equipment

100 – 160 Gallon	Glasteel and 316 SS receivers.
25 Br₂	25 gal glass lined steel bromine transfer egg.
Column	18" Diameter x 9 ft long, 150 psi rated, chromatographic column.
Sparkler Filters	33-D-17 (jacketed), 18-D-8; 18-S-23; 18-S-15 (jacketed), 316 SS Sparkler Filter Presses.
Nutsche Filters	4 x 33" diameter 316 SS Nutsche (jacketed) Pressure Filters (14 ft ³ solids capacity).
Mill	D-6 Fitzmill.
Homogenizer	25 h.p. Gaulin Homogenizer.
Centrifuge	24", Hastelloy C-276 Top unloading Tolhurst Centrifuge.
Dust Collector	Donaldson Torit, Model 84CAB.
Scales	5,000 lb. Electronic platform scales.
Dryer	60 ft ³ Stokes and pilot tray dryer.

Miscellaneous Process Equipment

Heat Exchangers	16ft ² ; Hastelloy C-276 Single Pass Shell & Tube Condenser.
Heat Exchangers	Variety of 316 SS shell and tube single pass heat exchangers for special set-ups.
Vacuum Pumps	Various Stokes Vacuum Pumps. (Capacity 150 CFM)
Pumps	Various 316 SS Centrifugal and Diaphragm Transfer Pumps.
200 SS	200 gal 316 SS processing unit, 220 psi rated, agitated, 180 psi rated jacket.
200 GL	200 gal, glass lined steel processing vessel, 25 psi rated, agitated and jacketed.
150 SS	150 gal, 316 SS processing vessel, 50 psi rated, 200 psi rated jacket, agitated, 25ft ² 316 SS condenser.
375 Plastic	375 gal polyethylene eductor scrubber system.

Utilities

Nitrogen Storage	3000 gal Cryogenic Nitrogen Storage Tank.
Boilers	1 x 100 h.p., 1 x 25 h.p., Cleaver Brooks Steam Boilers; 150 psi rated.
Chiller	2 x 40 ton Glycol Chiller system (-10°C to -15°C).
Water	400 ton Tower Water System.
Water	DI Water System (Fixed Resin Beds).
Hot Oil	Electric Hot Oil System for Evaporators.
Nitrogen	NIVOX 4010 Membrane Nitrogen System.
Compressor	15 & 30 h.p. reciprocating air compressors.
Cold Storage	10' x 12' 0°C – 5°C cold storage room.