

Refrac Systems Lot List

1. 41" Wide x 28" Deep x 60" Tall All Plastic and Fiberglass Shelving Unit with 4 Shelving Levels (included) containing:
 - Large compressed gas wall mounted air dryer unit,
 - 14" x 12" x 7.5" Deep Heated Bath with manual control pot.
 - Misc. Electronic control enclosures (Hoffman Type).
 - Brass Vacuum Chamber with Plexiglass Viewing Cover perfect for plastic infiltration processes on small parts.
 - Two Each Penwalt Electronic Pressure Gages 0-1550 mm Hg Absolute pressure readouts
 - SAES Getters Gas Purifier Control Unit & Power Supply
 - Unit is heavy and reads out 0-5 amps
 - Semi Gas Systems Hydrogen Gas Purifier (no controls) with 1/4" VRC connectors on the in and out valve on both sides of reactor with all stainless-steel orbital welded plumbing.
 - Nanochem Brand Helium Gas Purifier 1/4" VCR valve make ups.
 - Two misc. gas controls with press. Regs and other flow metering or foot pedal controls.
2. Stationary bread rack (included) including:
 - VWR Scientific Model 1230 Heated Stainless steel bath 11" x 13" x 6" nominal ID tank
Dimensions
 - Precision Scientific Stainless Steel Water Bath Model 186. Tank size is 16" x 27" x 6" deep with perforated internal cleaning pan and bimetallic temp gage included.
 - Four misc. Electronic Floor Cylinder Scales two have readouts (parts only operation not verified) HP 3468A Multi Meter (has broken glass on display but does power up.
 - Plastic Dust Enclosure with two doors and three internal shelves.
3. Working Small Glass Diffusion Pump Perfect for Teaching Pump Theory and operation. Has working Acatel two stage roughing pump on drip pan inside rolling cart. Is perfect for small glassware pumping applications and could also work for high vacuum evacuation of neon signs and similar glassware systems. Does not include any vacuum gauging but does have a 4 pin Bayard Alpert Ion Gage Tube and a 531 Thermocouple gage in the system. It is loaded with approx. 75 ml of Dow Corning 705 diffusion pump fluid.
4. Misc. Table of chem lab items including:
 - Parts of a Corning Glass Water Purification Still including the Graham Condenser and Bump Trap, but no other parts.
 - Misc LIQ glass columns with stand and several burettes.
 - Gas to liquid scrubber or contacting reactor with 40/50 ground glass flask and access port.
 - Thermolyne Maxi Stirrer Magnetic Stirrer and large 5 Gal Pyrex glass carboy flask (with large magnetic stir bar)
 - Misc. Beakers and other as shown
5. Stainless steel cleaning station with three approx. 12' X 12" X 12" cleaning tanks built into an all stainless counter top with a formed and raised "no-drip" perimeter. Two of the three tanks have built in

spray nozzle ports for external spray rinse nozzles (but were removed and capped off with Swagelok connects if needed).

6. Lot of misc. radiation detectors including:

- Two each Canberra Cryostat Model 7600 Radiation Detector With a nominal 2" GE (Li drifted) detector Model 7229 with mounted pre-amplifier model 2001 and heat pipe cold finger cryostat (No pumping LN2 required). One system labeled repaired in 6-1-83. No foreign sales on this item.
- Teledyne Isotopes Model 8-1212-I 3" DIA x 3" long NaI (TI) doped Gamma Ray Spec. Scintillation Detector with integral photomultiplier tube, and Canberra model 2005 pre-amp. Lot includes misc. preamp and SHV cables (??) and an old-style Texas Nuclear "cutie pie" handheld ionization detector for health physics applications (working but not sure about calibration). This lot also includes small Branson model 1200 ultrasonic cleaner, and a Techne Model SBS-2 Fluidized bed thermocouple calibration "sand bath" and misc. bottles. No foreign sales on this lot.

6 -1 Ladd Sputter Coater for SEM sample preparation. Systems has like new gold sputtering target with approx. 1/4 TOZ of gold intact, enough to do thousands of gold conductor sputtering depositions for use on non-conductive samples. System was removed working, and includes a Welch 1400 Duo Seal two stage vacuum pump that has a KF 16 inlet adaptor and tee with a separate Varian 531 gage tube plumbed on the top of the pump. It also includes a two stage CGA 580 compressed inert gas regulator with stainless steel braid hose for the argon feed system. Includes full operating manual.

7. Buchi Model RE 111 Rotovap with a Model 461 Water Bath, and Ground glass 24/42 vapor duct and vertical Chemglass plastic safety coated vertical condenser assembly as shown. This lot also includes another Buchi EL 131 Rotovap drive motor and stand working, but with no glassware included. System includes small plastic desiccant chamber.

8. Lot Misc. Lab Items Including:

- Lambda 0-20 VDC 0-15 Amp Adjustable DC power supply (good plating rectifier)
- Manostat adjustable speed Veristaltic/peristaltic pump
- Sifco Style Integrating power plating rectifier 0-50 VDC 0-30 amps also with integrating amp-hour counter for styli or brush plating applications.
- Corning Model PC-35 Lab Hot Plate and Waage 9" x 12" hot plate for liquid reduction or general lab use (both known working).
- Buehler Electromet Etcher 0-5.0 VDC, 0-1.0 Amps or dual range 0-100 mA.
- (F) Kitchen Aid Artisan Mixer with Stainless steel mixing bowl and misc. attachments as shown.
- Barnstead Model PM-6 Water Purity Meter with Megohm probe good to around 20 Megohm/Cm water quality levels.

9. Table with Misc. Lab items including:

- Two Each Marking Methods Model Mark 300 Part marking power supply and leads,
- Three Each Thermolyne 6" x 6" lab hot plates,
- A Selectron Model 835 PM (Sifco Style) integrating plating power supply for brush or styli plating.
- Kepco 0-20 VDC plating power supply with Misc. Integrating watt hour meter. Other misc. lab items as shown.

10. Table with glass lined baths including Promac Probath Acid heating bath (look like quartz) sized at 7.5" x 7.5" x 13" , Imtec Acculine Accubath Model QZ-A15-02-18A, Model 99-000-1269 quartz lined heating bath (New/Old Stock) sized at 8" x 8" x 15.5" Nom heated volume., Lauda Model RM-6 stainless steel constant temp bath -15 C to +120 C with fine resolution around 36 C. Lot includes misc. cleaning baskets but not the delivery tips shown. The large quartz bath was purchased as new, but without any crate or box, and was never used by Refrac.
11. Imtec Acculine Accubath Model QZ-A15-02-18A, Model 99-000-1269 quartz lined heating bath (New/Old Stock) sized at 8" x 8" x 15.5" Nom heated volume, brand new in the original shipping container.
12. Imtec Acculine Accubath Model QZ-A15-02-18A, Model 99-000-1269 quartz lined heating bath (New/Old Stock) sized at 8" x 8" x 15.5" Nom heated volume.
13. Misc. Lot of Ultrasonic cleaners and heated tanks (all stainless steel) and Selectron LTD. Model 1015 MPP plating power supply (designed with integrator for Amp-Hrs) for brush /styli plating operations. This lot also includes a PWR Model PulsePakswitching reversible plating power supply, designed to allow for progressive plating build ups even on reactive alloys. Misc. Terra Universal Inc Anti-Static Ionization Power Supply (no head included).
14. Lot Includes Plastic Acid hood, with many ground glass items as shown, all on a nice heavy duty stainless steel welded workbench (included).
15. Clean room Garment Enclosure as shown, and many other clean room garment and cleaning supplies.
16. TM Brand Model PC36-2 Large 36" cubed Stainless-Steel Vacuum/Convection Oven. Nice condition and working fine. System designed to operate at up to 350 F under vacuum or up to 15 PSIG positive pressure. No vacuum pumps are included (recommend using dry pumps only as this oven is clean and immaculate).
17. Misc. Clean Room Items.
18. Riston Style 12" Hot Roll laminator with the stainless steel clean room shelving unit and dust enclosure is included. The parts on the shelving unit are not included.
19. Clean Room Products Horizontal Laminar Flow Class 10 Assembly Bench includes custom 21.5" Deep x 49.5" Wide stainless steel top and two each gooseneck halogen lights.
20. Terra Universal UV A,B,& C Resistant Photoresist Storage Box Includes multiple lots of 12" wide with some Acid, or Alkaline Resistant films. Lot does not include Nilfisk vacuum cleaner shown.
21. Dupont Riston HRL-24" Hot Roll Laminator with manual and support table (white). Manual is included. This is ready for photoresist application, and has always been kept in an active clean room.
22. Dupont Riston PC-30 Photoresist exposure unit/printer. This lot includes a nice clean room vacuum hose reel as shown. The transformer needed to power this using 460 VAC Feed is being sold as Lot 153 below.

23. Refrac Custom CRESS 316L Vacuum Storage Tank sized at 12" ID x 18" long. Has a Lexan polycarbonate window $\frac{3}{4}$ " thick, so this system can also be used at elevated pressure (at your own risk), for epoxy potting and other infiltration processes. The system includes a Welch Duo Seal Model 1400 Two Stage Vacuum Pump (for service below 50 microns Hg) and includes an all-stainless steel vacuum control valve, hook up bellows, and KF 40 foreline back streaming oil trap. Refrac Systems Custom Aluminum Vacuum Storage Tank. System includes one Welch Duo Seal Model 1400 two stage Vacuum Pump and all KF 16/25 stainless steel plumbing and right-angle oil back streaming foreline trap.
24. VWR Model 1410 Vacuum Oven sized at 8" x 8" x 11" deep effective hot zone size. Oven includes one Welch Duo Seal Model 1400 two stage vacuum pump for service to below 50 microns Hg rough vacuum. This is a nice clean vacuum oven!! Blue-M Box Type Muffle Furnace sized at 4.8" W x 3.5" H x 14"D effective hot zone size, and is perfect for small crucible ashing and similar calcining operations up to ~1000 C in air. The shelves shown are not included, but the two high temp crucible tongs are included with this extremely clean furnace.
25. Blue M Electric Stabil-ThermBox Oven Model OV-725SC sized at 18"T x 18"D x 24" W (effective hot zone) with multiple shelf locations. Unit runs only 2.4 KW of 240V 1 phase power as needed to operate up to ~550 F in air. The control system includes an over temp protection controller for safe operations left un-attended.
26. Refrac Systems Custom Chemical Process Rack with 24/40 ground glass systems (too many to fully list). Cart includes a Leybold direct drive two stage Model D2A two stage rough vacuum pump, for service on chemical processes that run below 20 microns or higher. This system has 5 heating mantle power PID type power controls, multiple temperature readouts, multiple sizes of heating mantles, 2 different vacuum fractional distillation apparatus, a Soxhlet extraction system, and many many more mostly 24/40 ground glass items.
27. JelrusCerammat Type-S Vacuum Firing Oven. Bottom loading ~3" OD crucible type useful for any controlled ramp rate rough vacuum firings to ~1,200 C. This furnace is commonly used for firing dental porcelain but can serve almost any other lab furnace function. This system is being offered without any vacuum pumps, but does include a lot of misc. Drie Rite lab desiccating filters, and a small Mixed Bed De-ionized water system and pump. It does not include the table shown.
28. Buchi Model R-114 Rotary Evaporator (Rotovap) with a model B-481 digital heated water bath and perfect condenser assembly and vapor duct as shown. All you will need is a 24/40 boiling flask and this unit is good to go. All of the other misc. Rotovap parts, which includes a Buchi model RE working drive motor and misc. ring stands, quartz lamp heat bank, and the clean room grade stainless steel table are also included.
29. Misc. Lab Items Including:
- Thermoelectrics Unlimited Inc. Model TCP-2 Thermoelectric Cold Plate with rapid cooling to -20 C
 - Meyer Corp N-EVAP analytical evaporator, good for general heat bath use, such as liquid volume reduction or Rotovap systems use
 - Bio Sonic Model DC#-110 Ultrasonic cleaner
 - Zeiss Model 93-00- Model 6723Pentafet thin end window x-ray detector, and motorized depth adjustment stage. Unit has a 30 mm² detector area, and an ATWI thin end window. Factory flange and end window protective covers included.

- Four Shelves 24" x 48" Clean Room Shelving unit.
30. Large misc. Lot of Lab Plastics, carboys, graduated cylinders, tanks, jars, etc., mostly Nalgene and unused.
31. Large Misc. Lot of stainless steel pans (and mostly covers). This lot includes the stainless steel support table for this lot. Large Misc. Lot of stainless steel pan, trays, Bain Marie's, etc.
32. Misc. Lab Items: Includes Schumacher CVD source boiler control and Orion Research Ion analyzer Model 901 Control System, just to name a few. Lot includes a nice medium grey 6 Drawer steel case Desk with a light grey Formica top.
33. Misc. Lot of Lab Equipment Including:
- Buchi Model RE Rotovap with integral water bath (Nice!!)Includes all needed glassware items.
 - Custom Designed Peel Test/Tensile Test system includes a 0-45 Kg (Force) test gage, and a motorized stage to control the pulling speed
 - Two small magnetic stirrers
 - Small low mechanical force 4 point bending test system,
 - Misc. Teflon tubing heat exchanger, and small analog strip chart recorder.
34. Misc. electronics and temperature calibrator, including:
- Fluke 741 B Calibrator with two chargers and many used (unknown condition) batteries, and Pelican case
 - Leeds & Northrup Model 1300 process programmer/temperature controller
 - Leeds & Northrup SCR controller modules (3X)
 - Three different water conductivity sensors
 - Two each Heise 0-1000 PSIG pressure gages
 - Ircon Mirage Two Color Pyrometer System called at 200 F to 500 F temperature range. This is like new and perfect for real time soldering operations!!
 - misc. fluke VOM, Amp probes (2X), other items as shown, including welded work bench with riser.
35. Lot of misc. control electronics, leads, includes Honeywell DPR-1500 parts machines (X3) several power supplies, and a used Ircon Mirage two color pyrometer controller set up for 900 to 2400 C use. This lot even includes the stainless-steel table!!
36. Faxitron X-Ray System Model MX-20 S/N: 2321A0713 Manufacture Date 2004. Known working X-ray tube, with full manuals. System was originally sold with a CCD camera system, but this imaging system is not included (and you would probably be better off to purchase a late model aftermarket camera system anyway!!!). Doric Model 205 Minitrend Data Logger with 9 channels of Type-K thermocouple wire and plugs set up ready to run AMS 2750 TUS surveys on a 4 wheeled roller cart. Unitron Model ZSB Stereo Microscope on a cantilevered arm with a heavy roller cart.
37. Twin City International Twin Test XRF plating inspection system. Model XRF-450 Type EE-450. It was pulled from a working environment, so the stage drive motors, detector and collimator assembly, and X-Ray tube should all be good spare parts.

38. Misc. Lab Items including BK Precision 15 MHz Oscilloscope , Viking Instruments Norland Multi-channel analyzer with SCA (for gamma ray spec or similar bin counting), 2 Each Barnstead/Sybron De-ionized water storage tanks with integral resistivity meters (0-20 MegOhm range), 2 Halogen lamp microscope illuminators with external potentiometer remotes. Lot includes 6 drawers Steel Case Desk.

38-1 Thin Foil XRF Calibration Standards from Arbor Research Labs, Twin Cities, as follows:

- Pure Gold Foils (Various thicknesses),
- Gold over Nickel
- Pure Copper
- Lead/Tin Solders of varying elemental ratios over Copper
- 90 Lead-10 Tin solder over Copper
- Gold over Nickel over Copper
- Tin over Copper
- Zinc over Steel
- Cadmium over Steel
- ENP Foils (electro less nickel-phosphorous plating) ranging from 50 to 500 micro inches (Thin samples OK!!)
- Pure Silver foils 0-1000 micro inches
- Pure Nickel foils 0-1000 micro inches.
- Fisher Gold over Nickel Beta Backscatter Standards (This is one of the best XRF standards that has ever been collected and would easily cost > 1K\$/each in today's market)

39. Misc. Lab Items as shown. Lot includes 6 drawer Steel Case Desk

40. Wilson Model 5 JR BB Hardness Tester with 2 sets of weights. System needs service and re-calibration to ASTM E-18 specifications, but these extra deep throated testers are hard to find. Lot does not include roller cart.

41. Wilson Tukon Hardness Tester.

42. Lot of Misc. Microscopes and optical gauging systems. Lot includes two optical lps, and a nice oak table for your QC room. Buehler Optical Metallographic Specimen Library and Storage Cabinet.

43. Twin City International Inc. Twintest XRF PT/PC Plating Thickness Tester (This unit has the highly coveted dishwasher size enclosure with extra-long stroke lengths on the 3 axis drives, for testing larger parts). System was pulled from a working environment and has been serviced by Twin Cities since we purchased this unit from Motorola in the late 1990's. System comes with operating/software manuals and was working fine when removed for service 6 months ago.

44. Misc. Lab Items including:

- Ivan Servall Porter-Blumb Microtome, for slicing super thin microscopic sections in soft materials.
- Corning Hot Plate
- Two Each Advanced Manufacturing Technologies, Inc. Model 510 ct Structural Stress Analyzers and Test Frames. Both units have microprocessor driven stepper motor drives to control the stage motion.

- KSV Instruments LTD. Model LPR902 Powder Wettability meter. Lot includes the brown Formica Steel Case work table shown.

45. Beckman Coulter Model 640 IR spectrophotometer. System was operational but the auctioneer lost the controls during the move.

46. FMC/Syntron RoTap Style Test Sieve Shaker with a large lot of ASTM E-11 Test Sieves. Includes Stainless Steel Table.

47. Duriron Company PPI Division Motor Driven Hydraulic High Pressure Diaphragm Type Gas Compressor. Was originally built for pressurizing oxygen for use in HIPOX silicon oxide growth systems on wafer. System was contaminated and torn down, but never re-assembled. This is a great way for somebody to grab a high-purity and pressure diaphragm compressor for filling SCUBA tanks or any other high purity gas needs for just a few thousand \$\$\$. We found the box with all the needed top end components to re-assemble this with an all new diaphragm.

48. Large lot of DOA or won't calibrate vacuum sensor electronics for parts machines. Lot includes many Varian 843, 845 readouts (sorry no cables with this lot). Granville Phillips 280, other misc. Fredericks gages. Lot also includes two each Welch Turbo Torr turbomolecular vacuum pump controllers, and the nice stainless steel rolling cart this Lot is shown on. Perfect for the repair facilities that may need these parts (Duniway, etc.).

49. Lot of used Honeywell DCP 7700 microprocessor based furnace control systems. Most of these units have a power supply in the mainframe, but most have had most all of the other control boards removed. If you purchase this lot, you will probably have the last remaining power supplies for this great old control system that still exist. One of the great Honeywell repair houses (Like Industronics) should probably capture this lot to keep some spares around.

50. Fluid Management Inc. Gyromixer Model 36505 Miller Gyromixer ~ 5 Gallon Size. This was specifically built for high energy powder blending and milling, so this is way more energetic than most paint mixers.

51. Lot of misc. air-cooling fans. All eight fans work fine, so stay cool...

52. Lot of misc. low pressure MKS gages and flow metering & controls, including the following items:

- Four Baraton Pressure Transducers with the following Ranges: 0-1 Torr, 0-0.5" water, 0-10,000 Torr, 0-25,000 Torr So this sets you up for measuring low pressure very well.
- Flow Technologies Turbine Flow meter Readout,
- MKS Model 252 Exhaust Valve Controller
- MKS Model 244 Pressure and Flow Controller
- MKS Type 621 Signal Conditioners (2 Each)
- MKS Type 260 PS-3 Power Supply
- High Vacuum Manipulator (for vacuum probing work)
- Misc. Flow meters and controllers as shown.

53. Enerpac 25 Ton Hydraulic 4-Post Press. Includes "Hot Dog" Small air compressor, and 0-10,000 PSI Air over Water foot Operated Hydraulic Pump. The cylinder in this press was re-built 2 years ago and is like new condition!!

54. ETEC Auto Scan SEM control console. This is the controls for a working SEM (The e-column and vacuum chamber for this is being offered as lot 97 below). This control console also has a separate NIM BIN with signal strength counters for easier EDAX tuning for layered samples.

55. Small 15 Gallon Conical Tank on Stand with Air Driven Mixer

56. Misc. Lot of Scales and standards, including the following items:

- Mettler PE 24 Scale 0-24,000 grams by the gram (52.8 LBM), includes a Model GE 310 Counting keyboard controller.
- Mettler PE 400 Super precision scale 0-400 grams by 0.001 G
- Mettler GA 44 printers (2 each)
- Mettler GA 42 printer
- Mettler Model GE 310 counting terminal (2 each)
- Ohaus Triple Beam Balance. Have the regular flat pan and the larger scoop type bulk pan.
- Many other smaller scales and balances and test weights.
- The lot includes the brown Formica Steel Case table as shown.

57. Control electronics for Cambridge SEM Model Stereoscan-360 Lot includes full manuals for this system including all electrical schematics.

58. Misc. Lot Includes:

- Large lot of grounding leads and straps (mostly DESCO)
- SIMCO Aerostat Portable Static Eliminator
- Sargent Welch Turbo Torr Turbomolecular Pump Control (Several of these pumps and other controllers also appear later in the auction)
- Brown Steel Case Table is included in this lot.

59. Met Lab Cutting and Rough Polishing items, including:

- Buehler Model 16-1255AB Surfmet Grinder 110 VAC 4" wide x 36" belt size this unit works great and makes fast work of sample preliminary grinding!!
- Buehler Model 38-1471 Handimet-1 Hand Strip Grinder with water delivery system (still in service)
- Diamond Pacific? (Could be Johnson Bros.) 6" Diamond Saw Nice running saw for quick diamond cutting uses. Has a 1/3 HP Dayton electric motor running on 120 VAC.
- Stainless Steel cutting and rough polishing bench, includes power strips, and common water cooling and integral drain line system.

60. Two Different Buehler Polishing Bench Model Polymet and another Buehler Polishing Bench Model 471853, with many accessories as shown. The newer bench needs some service, but is a nice clean bench and all the drains work!!!

61. Met Lab Items, including:

- Buehler Vibromet Polisher

- Buehler MiniMet Polisher
- Buehler ISOMET Low Speed Saw
- Raytech-Shaw Diamond Faceting Lap & all tools needed for faceting rocks to seeker windows.
- Buehler Electromet- III Electro etch unit
- Buehler Metadi Diamond Slurry Pumping System

62. Buehler Simplimet-II Metallograph Mounting Press, Include three heaters, one quick cooling heat sink, and a custom made locking wrench as Buehler's handles just don't hold up. This is a clean non-leaking mounting press. This lot also includes several hundred spring mounting clips and a good starting supply of various types of clear thermoset powders, Blue Diayll Pthalate, and bake lite mounting materials. There are also a number of bake lite phenolic rings pre-forms to choose from. This is about 1K\$ of starting materials.

63. Misc. Lot Includes:

- Small Benchtop Plastic Injection Molding Press. Perfect for filling tubes with Delrin before bending them, or any other small molding project you may have.
- Pennsylvania Scale Company counting scale 0-20 LBM.
- Blender
- CBS Scientific Adjustable Slab Gel Kit, Model AS6-250. This Plexiglas system designed to do high voltage gel electrophoresis analysis, and is sized for gels sized at 125mm to 250mm in size. Clean unit, and includes the high voltage leads.

64. Two small Patterson Kelley (PK) style V-Mills each size for approximately one quart of powder for blending. It is normal to run these unattended overnight, for best results, but do a pretty good and gentle mix in around an hour.

65. Crossley Economy PK Style V-Mill, with small (~250 ml), medium (~500 ml), and large (~1.2 L), V-Mill Jars. This is a slower mill and is designed for mixing heavy powders like tungsten or molybdenum, where it should be run overnight to attain the best mixing.

66. Misc. Lot including:

- Harvard Apparatus Model 1201 Adjustable Speed Peristaltic Pump.
- The Challenge Machinery Company, Challenge Model JO Paper Drill ¼ HP- 120 VAC.
- Small Bell Jar Protective Cover 12" ID x 13.5" long, needs paint, but is a nice dent free cover.
- Two Drawer Metal Bin Cabinet

67. MV Products, Vacuum Pumping System for wet grinders or any application where some liquid is coming into the flow. This system contains a Rietschle 1.5 HP 208V/460VAC 3 Phase Motor direct drive vane type (Looks it, but could be a drag pump, or some type of liquid ring I am not sure and don't read German to know). The system has a Mercoid Type Fill switch, that auto drains the ~40 gallon liquid receiver tank.

68. Lot of Misc. Control Electronics:

- Leeds & Northrup 1300 Process Programmer
- Dunnigan Corp Model 4501A Precision Accelerometer Readout and Acoustic Particle Impingement PindTester (no foreign sales on this item)
- Commonwealth Scientific Model HCES 5000 power supply

- Digital Electronics Corp. Microvax computer (remember when these were cool and we all wanted one?)
- YAMATO Denki SS Power Supply Model VG 661A for heating and cooling control. Sorry but no leads or sensors are included in this lot.

69. Sprague Electric Co. Large high voltage (12,000 to 250 V) capacitor bank. There are also several smaller capacitors in this lot which is probably well over one Farad combined.

70. Sauer Danfoss Pump Corp. 50 HP Hydraulic Pump 1" (-16) JIC Males In and Out External feed controlled governor Model Code: LRLO30DLS1816NNN3C2TRA6NPLBNNNNNMFG-S133414000, Model No. 83029341 13-44-98278. This pump was sold to me as a 0-3000 PSIG Hydraulic source, but this was never verified. Stokes Vacuum Equip. Model 306-401 Roots Blower Type Vacuum Pump on a nice stainless steel rolling cart. Removed from service working, when rough pump below it died.

71. Leybold Vacuum Corp Ruvac Model WSU501 sealed vacuum pumps, set up to run Fomblin. Motors may have issues, but it's hard to kill these sealed blower units. Two Good Cores or maybe better included in this lot. Both pumps have internal switching for vacuum pressure start up.

Leybold Vacuum Corp Model D60A direct drive chemical vacuum pump (has gold plated check valves for halogen service). Good core, and was taken out of service running.

72. Leybold Vacuum Corp. Ruvac Model WSU-501 and also includes a Stokes Roots Blower Model 306-42 Both saved as potentially good spares

73. Misc. Adixen/Alcatel Dry Pump Cores. Lot includes 3 non-working dry pump cores. 2 Each ACP-40's and One Each ACP-28. These pumps were not fed any egregious chemistry, and quit working with apparent inverter issues. They are clean and should re-build by the factory for relatively cheap. I hate Adixens inverters, which don't seem to hold up to the PHX heat!!! Still, these core are worth over 3K\$ to a re-builder or end user. These pumps are not contaminated in any way and were used to fire parts to get them ready for UHV system use.

74. LFE Products Plasma Cleaning System Model Number PFS/PDE/PDS-501. This system was removed working but has sat a long time. It has perfect quarts and a nice internal plasma power supply, so this is at least some great spare parts. It may well be fine, but I would have the factory re-build this and save thousands!

75. Misc. Lot of Fluid handling parts, including Refrac Custom Fluid Pressure and Flow Test Bench. We ran this with electronic grade Isopropyl alcohol up to 400 PSI (Limited by our gauging and general paranoia), but this is a mixed 316/304 Stainless Steel ANSI Sch. 40 pipe welded pipe pressure vessel, so it's got a lot of safety margin at this pressure. Use this at your own risk, but do the ASME math and this is probably good to over 1,000 PSIG at room temp. This lot also includes a Manostat Varistaltic Peristaltic pump, and some misc. Destay-Co brand hold down pressure test and flushing fixtures. It also includes a Neslab Part Number 166103200100 constant temperature bath temperature controller.

76 Walker Power Corp. High Current Low Voltage FurnancePower Supply: This all copper 40 KW power supply consist of 0-460 VAC single phase step down transformer that outputs 0-20 V output. This is usually what is used when heating either a properly designed tungsten or graphite heating element matched for it. It is controlled by a satiable core reactor that feeds 0-460 VAC at up to 106 amps in and out, that is allowed to pass whatever voltage that is commanded by a 0-90 VDC control signal. The

resulting control allows for a small single phase "Robicon type" silicon controlled rectifier running on 120VAC at just a few amps, to control the big current of the main power supply. This system has CT meter coil taps, and transformer output voltages pre-wired for a main control console. It does not include the primary UV/AUX trip circuit breaker, so please plan to use this beautiful bullet proof power supply accordingly. This system also contains a small 2KVA instrument transformer that converts 460 VAC 3 Phase to 220VAC 3 Phase (and may also have taps to 120 VAC as well)

Quick Recap for the EE crew:

Primary 460 VAC – 1006 amp primary x 20 Volt-2000 Amp Secondary Single Phase It also has nice +/- 5% input taps. Power is fed into the primary from a separate all-copper Sat. Core Reactor at 0-460 VAC in and out, driven by a 0-90 VDC SCR type control signal at 2.6 amps nominal. This will drive a seriously big tungsten light bulb, and was originally built to control a fiber optic drawing tower furnace using a microprocessor based "ramp soak" controller receiving a pyrometer signal as the front end of a PID control loop. It would also drive a wicked big PVD reactor with a large tungsten source evaporation boat.

77. Walker Power Corp High Current Low Voltage Furnace Power Supply similar to the above but:

40 KVA power as 460 VAC +/-5% taps 3 Phase (59 amps) x 22 Volts at 1050 Amps 3 Phase Output. System is similarly controlled by an all-copper Sat. Core Reactor (3-Phase 0-460 VAV in and out) that uses slightly larger current 0-90 VDC SCR at 4.33 amps to drive the Sat Rx. This system does not contain any aux instrument power within this enclosure but does have current transformers and output voltage taps wired for proper display. It has both an UV/AUX Trip circuit breaker (90 amps) and a fused disconnects switch for redundant power control and ease of wiring (no fuses are installed)

78. Lot of misc. Balzers vacuum items, including:

- Balzers HLT 160 Helium Leak Detector. Needs to have the internal rough pump rebuilt. Good unit otherwise.
- Balzers Prisma RGA head (filaments and internals all look fine). Lot also includes misc. other plumbing fittings shown.

79. Misc. Lot of brand new but in the missing box Tube Furnace Heating Elements including:

- 3 Each 5.25" ID x 26.5" long (unknown type but look like Watlow cast heaters) black interior.
- 6 pairs of 2" ID x 24" long potted Kanthal (??) C-shaped hard ceramic (Thermcraft split tube style) heating elements probably all good to 1,150 C.
- This lot also includes the outer stainless- steel wrap and support insulation structures shown as well as the laboratory style base cabinets and 71.5" long Formica counter top.

80. Misc. Lot of Lab Items, including:

- Corning Model PC-35 Hot Plate
- Refrac Systems Custom Rotating Mandrel CVD Reactor System uses Ferrofluid vacuum rotary feed through for UHV vacuum service. Rotating mandrel has a Miniarik Motor with Speed Control, 120 VAC. No Foreign Shipments on this item.

81. Carver Model C2-Post 12 Ton Platen Press, with integral safety shield, and external hydraulic gage with pointers to record max pressures utilized.

82. Carver Model SP 4-Post 30 Ton Platen Press Works great!! Carver Hydraulic Press Load and Heater Control System was originally attached to Lot 82 above, but can also be adapted to many other Carver presses, including the model C above (Lot.81). This Lot does not contain any electric platen heaters.

83. Centorr/Refrac Systems Custom High Temperature Vacuum Hot Press. Refrac converted a Centorr Model 60 High Temperature Vertical Tungsten Furnace that also has Tungsten Mesh Heating Element with a Round Vertical Effective Hot Zone Sized at 6" ID x 12" Tall. Refrac Systems made significant improvements to this furnace, which had an original part number of: 60-6X12-W-A-0485-A including:

- First wall of the hot zone re-lined with Rhenium metal (sides at 0.030" thick nominal Rhenium, Bottom First wall = 0.040" Rhenium with rhenium washers at all tungsten bolts holding the zone into the jail making this one tough little hot zone (and is still in like new condition) as can be seen in the photos.
- Water cooled Copper jail (which is included as a spare in this lot) was converted to a Stainless Steel 316L jail that has the electropolished seamless 316L tubing water cooling lines nickel brazed on using BNi-2 (not some wimpy silver solder).
- Added an all Enerpac 10 Ton hydraulic press cylinder and water cooled rams with 12" of stroke on the upper cylinder. The inner 1" OD hot rams are pure tungsten.
- Enerpac P-80 hydraulic pump loading the cylinder into a Refrac custom designed press frame (nominally used at around 4,000 LBF only limited by the net deflection of the frame).

This furnace is currently configured to run up to around 1,500 C as it has Three Special Limits Type-S platinum bare wire thermocouples installed. The system can easily be configured to run Type-C tungsten rhenium thermocouples, or an optical pyrometer that is included in Lot 83A for running at temperatures up to ~2,500 C!!

System Controls and Power Supply includes a Walker Power supply rated at 75 KVA as 460 VAC three Phase by 20/25 VAC Scott Connected two single phase outputs to the two tungsten mesh heating element contained in the above VHP .

Spare hot zone along with several brand-new tungsten mesh heating elements. We ran hundreds of high-temperature runs with this furnace and never needed a spare element. These are well designed mesh elements, and there are enough elements to keep this system running for years.

84. Misc. Lot of Lab Items, including:

- Fisher Sci. Accumet Selective Ion Analyzer Mod.750
- JC Schumacher P/N: STC-1500 Model 13 CVD Source Liquid Boiler and Controller
- Thermomix Model 1441 Constant Temp Bath 20-150 C Range
- Emco Model CM-100 Lab Dissolver Stirring Motor and Heavy -Duty Stand.
- Perforated Stainless Steel Hot-Part Cooling Table With integral Box Fan.

85. Lepel Industries Solid State Induction Power Supply Model MR-7.5 Type 0711-0025 runs on ~12 KW 460 VAC 3-Phase with a 15 Amp feed. System needs 3/8 water cooling lines in & out, and has copper buss bars out to your working coil (not included).

86. Misc. Lot of welding curtain supports as shown.

87. Small Electronic Lifting Cart 0-100 LBM, System was Built by Lift Smart, and has an integral NiCad Battery that works. System includes an aluminum lifting Clamp for ~5 gallon size pails as shown. This is a nice lifting cart and has great locking wheels.

88. Refrac Systems Custom Neutron Source Shielding System for Neutron Activation Analysis using your furnished 1.2" OD x 1.5" long cylindrical AmBe or RaBe source (Not Included). This tank has 10" Walls x 22 Inch Long made out of boron doped UHMW polyethylene that is surrounded by 2" of lead shot (approx. 600 LBM) for secondary gamma ray shielding. The Source Holder is 2" OD x 10" deep and made using similar B-Doped UHMW poly jacketed in aluminum to prevent swelling around the source. The entire shield is contained in a 24" DIA Sch. 40 Stainless Steel 316L Pipe and welded plate base outer jacket with heavy duty caster wheels so this shield can be easily transported. No Foreign Sales on this Item.

89. Hunterdon Water Cooled Transformer Model AB-1203-29 35 KVA Single Phase 460 VAC x 57 VAC out. This is brand new and in excellent condition. It has an integral Temp Guard System and runs on a 0-10 VDC 40 amp control SCR. It has good caster wheels mounted on the bottom for easy storage.

90. Large Stainless Steel 316 "U" Stamped ASME Pressure Vessel Built by Nat'l. BD. No 582, Certified by Fluitron. This vessel has a screw type "Bridgeman" cover that seals a working cavity approx. 9" ID x 12" Deep Code Rated to 11,000 PSIG at 150 F. We put it on a plate with wheels so it can be moved (with some effort) and has clearance for a high pressure 3/8" line out the bottom (with a "Snow Trick" Cone fitting if memory serves me). This all stainless 316 vessel is perfect for high pressure potting or CIP work, and is super clean as shown.

91. Barnstead Model MP-1 Mega Pure Glass Water Still. System uses a Corning Vicor Type heater (and we have several working spares included in this lot). This type of still makes about the purest water that can be made, and we found it economical to run it using DI water fed from a mixed bed DI resin cartridge to minimize the maintenance the still required.

Spare identical unit but with missing boiler (You can easily buy this spare and have two complete units.

Lot of Small Culligan Type Mixed Bed DI water purification canisters. Culligan can easily re-gen these canisters for use to make ~10 MegOhm delivered DI water. We used these to purify tap water to feed to the Mega Pure Stills noted above to minimize scale formation in these stills which made thousands of gallons of near 20 MegOhm DI for our cleaning line use.

92. Vacuum Industries (Now Centorr Vacuum Industries) Rough Vacuum Furnace control system. Includes Fuji and Honeywell controls as shown. System has a nice layout on the fusing and Allen Bradley Motor Controls.

93. Graphite or Tungsten Furnace step down Transformer Set up for two sided "clamshell" heating zones. Transformer is a "Scott Connected" 3-Phase 456 VAC with +/- 5% Taps x 24 VAC Output as two Single Phase outputs into copper buss bars. This allows one to take a 460 volt feed and supply power to a front and rear clamshell heating element typically mounted to the chamber door (and vessel rear) for easy furnace loading. It was removed from the system being sold as Lot 117 Below, and is sized to drive Lot 117's graphite heating element.

94. WPI (which was known as Walker Power) 120 KVA Phase Change Scott Connect Step Down Furnace Heating Transformer. Transformer has taps for 456 VAC or 198 VAC 3-Phase Power Input x 30 VAC Nominal (and can be varied by taps) as 2 single phase outputs.

95. Lot of Misc. Lab Items, Including:

- Micromeritics Flow Sorb II 2300 BET Type Powder surface area analyzer. Contact Micromeritics and brush up on your Langmuir gas adsorption equations to easily use this to measure powder metal surface areas. Includes extra Glassware. ATM Sonic Sifter uses sound power to sieve powders.
- Bold Technologies Chromalox Line DI Water Heater
- Adjustable work holding bench clamp This lot includes the table.

96. Misc. Lot including:

- ETEC Autoscan Scanning Electron Microscope (SEM) Control Console. (Spare Parts Machine) will be useful to support the previous Lot 54 unit which we had working before it was removed.
- Hewlett Packard Model 5830A Gas Chromatograph System includes the Terminal and what looks like the FID detector head.

97. ETEC Autoscan SEM column and Stage Vacuum Sample Chamber. This SEM chamber includes a working Varian HS-3 Diffusion Pump and air support stage for the chamber. It does not include the needed two stage vacuum pump needed to achieve high vacuum. This is probably a good base, but should be considered as a spare parts machine (nearly identical to lot 140). Purchase both and get nice little SEM on the cheap with enough spare parts to run a good long while (TBD and good luck).

98. Lot of Misc. Lab Equipment, including:

- Branson Model B-92 Ultrasonic Cleaner ~2 gallon size
- Buchi Model 461 Water Bath (For Rotovaps and general use)
- Two Each Thermolyne Type 1900 ~6" x 6" Sized Hot Plates one has thermocouple temp meter readout
- Buchler Instruments Evapo-Mix Shacking Hot Water Bath
- MDM BioDesign 55°C Steam Incubator System
- Stainless Steel Floor Scale Goes over 200 LBM
- Robicon Three Phase SCR 50 amp 240 VAC
- Lot includes Stainless Steel Rolling Table.

99. Brew Vacuum Furnace All Moly Hot Zone sized at 18" x 18" x 36" With 6-Sided Heating using ¼" rod hairpin molybdenum heat elements in a classical "Hairpin" design. The elements are configured to run in what is classically known as a star configuration (x2) which is quite elegant. This system was originally designed and built for the DOE at Rocky Flats and contains many special features. It was bought by them and stored as a spare for a production process. We purchased this in the brand-new but stored condition, so it has never been exposed to any beryllium or other radionuclide materials.

This system has a small externally mounted gas fan quench cooler system that has a small internal water leak. We diagnosed this issue, but gave up trying to fix this as we had planned to let this furnace sell at auction, but as a result this hot zone also has minor oxidation damage. If somebody wants to fix the "external" gas chiller (or simply remove it) this furnace was routinely running at low to mid 10⁻⁶ Torr

range. It has a nice VHS-10 diffusion pump with "football" type liquid nitrogen trap for near zero back streaming vacuum service. It has an Alcatel 2063 main roughing pump (which is a bit oversized, but this system pumps in under 10 minutes) and a Sargent Welch Duo Seal Model 1402B holding pump. We ran about 1/2 a million parts in this system without using any organics (the system also has an extra 6" ASA port that uses a Varian Model Turbo-V 1000 HT Turbo pump backed by an Adixen ACP-28 Dry pump for totally Dry Vacuum Service) where the next use was in 10-11 Torr UHV vacuum, so this furnace is still very clean. No foreign sales on this lot.

Brew Vacuum Furnace Control System, Continued lot for this system, which includes a Honeywell DPR-1500 strip chart recorder (and a one-color impact printer which may be the last working recorder that meets a real meets a 30+year record retention specification, a Honeywell DCP 7700 controller set up for using a Type-S bare wire control T/C, and a Honeywell UDC 2000 Over Temp controller running on a Type C (W5ReVsW26Re) over temp T/C.

Needs to dump the quench system to be a really good vacuum furnace. It will only take a couple of 8" ASA blank -off plates to remove this rather klugey quench gas system.

100. Electrical Control Console 19" Standard ISA rack with modest controls system controls for the CTI 8 Onboard 8F Cryopump pump and compressor included with the vacuum chamber. Motorola/Norcal Products Custom Type 2 bonder for flexible panel display bonding consisting of a Norcal Products all Stainless steel 316L dual wall water cooled UHV vacuum chamber with multiple 2.75" and 3.25" Conflat Flange chamber penetrations, and load leveling UHP bellows adaptors.

Each system has two each Huntington magnetically coupled UHP linear actuators Model VFS-1690-24 UHV magnetic coupled actuators (list price = 17.5 K\$/Each) as needed to achieve a uniform load on the interior base platen that can easily be leveled using the 12 bottom caged bellows 2.75" Conflat hearth support ports for bonding OLED and similar displays. These chambers have multiple zones Watlow brand flat Ni-Cr heaters installed for operation to approx. 650 C bonding temperatures. The system has an CTI Onboard-8 Cryopump with an 8" Conflat mounting flange CTI-8F is mounted on an 8" Conflat cross fitting that has a hinged glass to Kovar 6" nominal sight port for precision load locking parts into the chamber. The main gate valve to the chamber is a VAT 14" Conflat valve rated for UHV service. These systems originally cost Motorola over 1M\$/each to build, so getting these at auction is a bargain for sure. No foreign sales on this lot.

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systems originally cost Motorola over 1M\$/each to build, so getting these at auction is a bargain for sure. No foreign sales on this lot.

102. Motorola/Norcal products CRESS 316L dual wall UHV bonder that is similar in design to the systems described in Lots 100/101, but this system contains two 8" Conflat crosses and two VAT main gate isolation valves to allow for adding an additional pumping system for easier "load-locking" of parts. There is no hinged window glass ports included on this system. This system also has only one single electronic motor driven UHV magnetic coupled actuator model R3B23-705B-18P-BDE-B5 Similar to the other Huntington Mag Coupled Actuators.

103. Flat Products Segmented Storage Shelf, complete with numerous sheets of black plastic.

104. Three Photographic Light Stands

105. Three Chem Lab Rotary "Lazy Suzan" Reagent Stands, One Additional Poly Pro Reagent Storage Bin Sized for 12 Each 2-liter sized reagent bottles (not included).

106. Misc. Lot Including:

- Three Each Near New condition Hegman Style Grinding Gauges
- Stokes McCleod vacuum Gauge (unknown condition but appears intact and un-broken),
- Central Science Corp. Variable High Output Air Source Model Number 36801
- Five New in the Box 24" Square LED Light Panels for Grid Ceiling use.

107. Lot of Misc Lab Items including:

- Mettler Scale PC 2000 0 to 2 Kg by the 0.01 grams works fine
- Sartorius Balance Corp Model 1206 MP electronic scale 0-1200 grams by the 0.1 gram Turns on but not stable.
- Three small diaphragm pumps,
- Corning Model PC-300 Lab Hot Plate
- Small Punch and Cutter for making braze alloy preforms.

108. Two Large Plastic and one Boekel Brand Stainless Steel Burette and Pipette Washing Machine with Two Plastic Static Cleaning Cylindrical Tanks

109. Neslab Model RTE-100 constant Temp Bath with Controller For use from -30 to +100 Degrees C. and one, Boekel Small Two Shelf Desiccant Box

110. Lot Misc. including:

- Haake Constant Temp Refrigerated Bath Model A82
- Teledyne Instruments Trace Oxygen Analyzer (Fuel Cell Type)

111. Lot of Misc. Lab Items Including:

- Small Refrac Systems Custom Rock Crusher with 1.5" x 2" inlet throat with Nice 1/3 HP Baldor Super-E 120 VAC motor.
- Old Sargent Welch 1402 B Duo Seal Vacuum Pump (needs belt) has Non-Standard but OSHA Compliant Belt Guard.
- Sargent Welch 1402 B Duo Seal Vacuum Pump, Tagged: Needs Eval, new Shaft Seal and Belt. This pump has KF-25 Stainless Steel adaptor fittings in and out and looks clean. It has a good belt guard and is on nice lockable Caster Wheels.
- Small ~1/2 HP Five Stage Regenerative Air/Vacuum Pump.

112. Refrac Systems Tube Rack. Each tube is 1.5" Sch. 40 PVC pipe Rack holds 91 tubes as a 7 x 13 array. Each tube is ~36.5" Inside length and is perfect for weld wire storage. 13 tubes are missing. This rack is sitting on a nice 1/2" thick painted steel support plate with duty caster wheels.

113. Leybold D30 AC Vacuum Pump Core (Needs Rebuild)

114. Stainless steel shelving unit with misc. furnace fixtures. Also has a small 6" wide Pexto hand shear, that needs a new blade, but has a nice catch pan built in.

115. Centorr Vacuum Industries Model 3-2-42-8 (3-4-30-8) Czochralski Crystal grower drive motor assy. S/N: 3-6063, Contains a nice Miniarik Drive Model SL14P.

116. Large Halmar Thyristor Power Controller Model PA1242300D 240 VAC 230 Amp Single Phase Controller S/N:8410008. Perfect for driving that large single phase Crystal grower furnace.

117. Centorr Vacuum Industries Vacuum Chamber on Legs. This Stainless inner and cold rolled outer water cooled chamber is ~40" ID x ~28" straight internal length and has a 6" water cooled RAM port on the top and bottom about 10" from the front flange (this means that the ram/crystal grower port is in the forward 1/3 of the chamber for easy loading). It has 4 power ports and feed through accessories to mount the included graphite heating element hot zone sized at ~10" ID x 14" Tall.

This chamber also has a rear mounted 6" ASA pumping port with a VRC brand 6" high vacuum gate valve and a Varian Box style long life LN2 cryotrap. This system can be re-built using your own heating system, but is sized to run on the power supply step down transformer sold above as Lot No. 93. By one of the many 6" ASA cryopumps in this auction, and you can build a complete system pretty quickly. Note: I had started building this as a crystal grower due to all the sapphire work being done by GTAT in Mesa for Apple.

118. Stainless Steel Gas Retort approx. 17.5" ID x 34" straight length. Retort has a nice support base and internal flat bottom hearth, but does not come with a lid. It has a nice perimeter sand seal and stands about 45" tall as is. It fits cleanly inside any kiln or other box oven > 22" ID.

119. Thermal Technologies (Astro) Model 1000-4560 FP-20 S/N: F8908029, Small Vertical Graphite High Temperature Tube Furnace. System requires only 20 KVA of 208 VAC Single Phase Power to Run, and includes a 100 Amp Main Breaker enclosed in a Disconnect Box for easy wiring. There are no vacuum pumps included in this Lot, but there are several small rolling diffusion pump carts that could be used with this system later in this auction. The system has a Mikron instruments pyrometer and gas controls for running two different process gases.

Large single phase graphite heating element. Does not go with any of these systems but is brand new. Looks to be 25 to 30 KW single phase and is packed to ship.

120. Sargent Welch 6" ASA Turbo Torr Brand Turbomolecular Vacuum Pump with ancillary foreline vacuum valve and Varian Model 536 thermocouple type vacuum gage tube. The controls for this pump are also in this auction.

121. Refrac Systems Custom Knife Edge Tape Casting Machine. This unit is set up to run bindered tape formulations up to 8" wide. There are several kilometers of 6" wide mylar tape included in this lot, as well as several smaller rolls of 8" wide mylar. The knife edge "gap" on this system is precision micrometer controlled and may be set at any desired usable tape thickness. We ran lots of Yttrium and Hafnium Oxide tape for our own use, as well as developmental quantities of specialty tungsten carbide formulations that worked quite well. We will be happy to discuss binders with the purchaser, but many conventional binder formulations will work well with this nifty taper caster.

122. Lot Misc. Equipment, including:

- Unitek Model 1-133-02 0-500 Watt Second Capacitance Discharge Spot Welder with Remote Transformer.
- Sola 125 Vac 20 Amp inlet 16.7 Amp outlet Noise Isolation Transformer.

123. Misc. Lot of Equipment, including:

- Electronic Measurements Inc. 0-10 VDC 0-300 Amp SCR Power Supply.
- Varian Quadrupole Gas Analyzer Model 978-100B System Controller
- Unitek foot pedal controlled spot weld head

124. Two Each Power Supplies ~7KVA 240 VAC Single Phase to 70 amps maximum 100/120 VAC. There are lots of voltage balancing taps on these like new transformers. Also Included is another 3 KW ACME instrument power supply converting either 460/208 VAC to 120 VAC outputs.

125. Dragon Style Propane Melting Furnace for ~ 10 Kg Melting Crucibles. This system is complete with bullion molds, and small pouring type ladles. Perfect for silver and gold smelting, or for aluminum or bronze sand casting, or other glass blowing projects. This furnace is good to 1300 C. Entire system is sitting on a real heavy duty stainless steel roller cart, so that this system can be easily moved outside for smelting use, and put away for inclement weather conditions. We have included one nice 10 Lb. Silicon carbide melting crucible that has already been painted with a mold release aid.

126. Perkin Elmer Model ICP 6500 Inductively Coupled Plasma (ICP) Atomic Adsorption Spectroscopy (AAS) System. This dual source system has both flame emission and a small plasma torch to excite the samples for analysis. This method is considered one of the most selective and accurate methods to make wet chemistry analysis of trace element contents in liquid samples. Lot No. 221 contains over 40 different hollow cathode tubes that may be used with this or most other AAS systems. We also have a spare (looks like platinum) burner assembly with this unit.

Integrated Air Systems Model AC2-24-5 Air Refrigeration Unit Perfect for chilling down a hot server rack. Runs on 20 amp of 208 VAC Single Phase (There is another identical unit being sold later as Lot 381).

127. Gomco Brand Model 6003 Gastrointestinal Drainage "Foley" Pump. Has selector switch for running 120mm Hg or 90mm Hg Vacuum Pressure Range. Includes a liquid trap that makes this perfect for evacuating volumes containing precious liquids. Trap Volume is ~ 1 Gallon. Needs cleaning but runs nice.

128. Gomco Brand Model 6036 Constant and Intermittent Vacuum Pump. Has an internal regulator to be able to set vacuum suction level and a knob for adjusting the intermittent run time duration when switched to the intermittent pump operation. Similar to lot 127 above and also has a trapped ~1Gallon liquid collection reservoir.

129. Sargent Welch Model 1400 Duo Seal Vacuum Pump on a nice Stainless Steel cart. This pump is plumbed to be used for rapid inerting and pressure control of furnace chambers/HIP retorts/Pressure Bags and similar loading Bellows. System includes two compound pressure gages and all Swagelok Stainless valves, including a pressure relief valve on the inert gas line, to avoid over pressurizing delicate pressure bags, etc.

130. Vacuum Atmospheres Inert Gas Dry Box System approx. 40" wide x 30" tall (sloping front) x 28" Deep with a 15" ID x 25" Vacuum Ante Chamber. This rather deluxe box includes a regenerative gas dryer, a high power/current welding power feed thru, 12 each Channels of Dual Type-K or Type-T Thermocouples with a dual sided strip, mounted as a patch panel, a Pedatrol Model HP-63-P Magnehelic Type pressure Compensation control system, and a Mettler PE 600 digital electronic Scale and a custom Stainless -Steel Welded Pan Custom Made for the Inside Bottom of this Dry Box. This box was painted with Imron Orange Paint on Its Exterior and low Outgass White Epoxy Paint on the interior. We have successfully used this box for many years and it currently has very nice accordion style "cuffed" style dry box gloves. This Lot Includes the support table and the Alcatel two stage roughing vacuum pump for the ante chamber as shown.

131. Lab Roller Cart 30" x 60" with a Stainless Steel Top and Galvanized bottom shelf. Cart has two Sargent Welch Duo-Seal Vacuum pump cores, a Model 1400 pump body alone (with KF-16 Stainless Steel In-Out Fittings), and a Model 1402 with a good mounted Dayton 120VAC motor.

132. Perkin Elmer Plasma Power Supply for Lot 126 ICP/AAS unit. This lot also includes a nice Teflon diaphragm chemical pump and a 1" OD Rod Support Stand.

133. Lot of Misc. Rapid Heating System Parts, including Watlow cartridge heaters, Sylvania hot air knife cartridges, many types of air duct heaters, and quartz lamps. As Shown too long to list.

134. UniteK Model 500 Dual Range Capacitance Discharge Spot Welder 0-500 Watt Second max power. System includes working step-down transformer and an opposed electrode Spot Welding Station.

135. Unitek Unibond Model Number 1-124-03 Quick Lamp Heat Power Supply, and a Hughes Model HTT-550 Thermocouple Controlled welding power supply.

136. Unitek Percussive Arc Power Supply Model PA570 0-300VDC, and a Black & Webster Model 610 Synchronous AC Power Supply feeding a Model 142081-04 Welding head power controller. System includes an Opposed C-Clamp Spot Welding Station.

137. Materials Research Furnaces, Inc. (MRF) 3" Quartz Tube Furnace With an Active Heated Length of 12" nominal. System has water cooled ends that support the quartz and allows for sealed thermal expansion using a stainless bellows on one end. System is set up to run vacuum, wet or dry hydrogen or argon/nitrogen any inert cover gas up to 1,150 C continuous or 1,200 C Max.

This Systems runs on 4KW as 208 VAC 1 Phase 30 Amps (System also needs a solid Neutral and Ground. The 3" OD Quartz Tube is Perfect as it sits, and this system includes a nice hydrogen gas flare system with a SiC ignitor built in. This Lot includes Stainless Steel Support Tables Complete and the gas controls to its left as shown.

138. Aluminum Vacuum Chuck as shown.

139. Large Misc. Lot of Lab Equipment, Including:

- Large Lot of Mercury and Alcohol Thermometers,
- Parr Stainless Steel High Pressure Reaction Vessel ~250 ml Model 101A 11782 C20 06157B with Lid Model 394A-5202-070578
- Chatillon Force Gages (2X) one at 1 KG by the 10 grams, and one 10 LBM by the 2 Oz range
- Hunter Spring Force Gage 0-50 LBF.
- Misc. Stainless Steel Hose Barb, Tee's Etc. For 3/8" Tygon style hose.
- Buchi Model HB-140 Small Heated Bath
- Ceran Hot Plate with Magnetic Stirrer and Large Stir Bar
- LAB EGG Brand Stirring Motor and Stand
- Large Glass Cold Trap and Metal Dewar
- Pope Scientific ~750 ML Lab Dewar Flask (Clear)
- Auto Pipettor 0-1 ML graduated with stop mounts on 24/40 ground glass flask (not included).

140. ETEC SEM Electron Column and Vacuum Stage Chamber Goes with Lot 54 control electronics. A smart guy would buy both of these SEM lots and have spares to build and run a nice old school SEM. Perfect for a community College or Excellent High School Environment.

141. Refrac Systems Custom Aluminum Vacuum Chamber ~37.2" ID x 45" Long Straight Length. Has KF-40 Vacuum Pump Connection Line (Vac. Pump Not Included). Has Two Unwelded 6" ASA Aluminum Flanges that could be added to build this into a great space simulation chamber.

142. TM Vacuum Products Model D-8081 Dry Box Inert Gas Handling system includes One 12" x 12" x 15" Straight Length Vacuum Ante Chamber mounted on a 59" Length Dry Box with 4 Gloves Per Section. Box is up on wheels at a convenient working height while standing. (Dry Train Right Side)

TM Vacuum Products Model D-8081 Dry Box with Vacuum Drying Oven Model TM 1203-D3014-1 runs on 208 VAC 1-Phase 45 Amps. This is mounted as the Left end of the combined chambers which is 118" Overall Length. The system has numerous other features, and is ready to put back into service with a little TLC and new gloves.

143. Superior Electric Corp. Power Stat "Variac" Variable Output Transformer Model No. 11560-34 Unit is 24.2 KVA set up for 0 to 240 VAC 3 Phase In x 0 to 280 VAC Power Out up to 50 Amps.

144. Unknown Mfg. 4 Post Air Operated Platen Press with 18" x 21" inside the 4 guide bearing shafts x 6" of cylinder Stroke using a Speedaire Model 2W490 6" DIA Aluminum Air Cylinder.

145. Walker Power Supply For Lot 146. Centorr Tilt Pour Tungsten Furnace. Unit has a 30 KW stepdown transformer and Saturable Core Reactor power control system converting 208/220/230/240 VAC to 11 VAC One Phase for Tungsten Heating Element. Unit is S/N: 2.

146. Centorr Associates Model TP-2.6X6-WD-04S4-A-19, Serial Number: TP-2615. This is a nifty small high vacuum tilt pour furnace that uses a small single phase tungsten heating element to melt small ~100 mL sized batches of almost any metal (This system is rated to well over 2000C with the right melting crucible). It has a Varian 843 Ion Gage and Twin T/C gages for High Vacuum sensing, and a Honeywell DCP 700 ramp soak control programmer running on a W526 Type-C Thermocouple. Vacuum pumping is achieved by use of a Varian VHS-4 Diffusion pump. No Roughing pump is included in this system. We bought this for casting platinum group metals, but you could also use it to melt almost anything metallic. As it is a S/N 2 unit that was originally purchased by the DoE it is almost anybody's guess what they were using it for. No Foreign Sales on This Lot.

147. AmeriChem Engineering Double Door PolyPro Storage Cabinet Motherload of Pipettes, Small Beakers, Test Tubes & Racks Misc. Small Nalgene Bottles

148. Misc. Lot as Shown. Has a Portable Medical Oxygen Bottle (Full) Four Simplex Fire Alarm Horns, A Large Metal Alarm Bell, misc. CCTV camera's and mounts other misc. as shown.

149. Welding Twin Hose Reel ~100 Ft, another enclosed shop air reel, both painted Royal Blue. This lot includes the heavy-duty stainless-steel table above the reels.

150. Two Door PolyPro Shelf Riser and Small PolyPro Tank

151. Misc. Lot of RGA and Vacuum Equipment, Including:

- Inficon RGA Model IQ200
- Inficon IMC2 Controllers (X-2 each)
- UTI Model 100 C with RF Oscillator
- Haden RGA Model HAL301
- UTI Model 211 RGA Controller
- Granville Phillips Ionization Gage Tube Controller
- Spectromass RGA Multiplexer Unit (8-Channel) 2 Each units (H)AmetekDycor RGA Model M-100C
- Lot includes Stainless-Steel Roller Cart.

152. CM Furnaces Inc. Rapid Temp 1700 Series MolyDiSilicide Elements Box Furnace ~8" cube Working Hot Zone. Needs new Elements.

153. Walker Power Transformer 7.2KVA 460 VAC x 380 VAC 3-Phase Taps for wiring as Y or Delta (Note this was used to make the 380 VAC needed to run the Riston Photoresist exposure unit sold earlier in this auction as Lot. 22.

154. United State Thermoelectric Cold Plate with only 283 Run Hours shown on its HOBBS meter. Unit is an INTEL Iso chiller Model 322/3015 and includes the Stainless Steel cart shown.

155. Oxy-Acetylene Torch Set Up as shown. Works fine and bottles are ~ 1/2 full.

156. Microzone Brand Stainless-Steel Down Draft Clean Room Serology Bench 2" Deep x 72" wide (internal bench dims).

157. Rolling Tooling Box with all tools shown
158. Forma Scientific Hot Shaker Bath 11" D x 13" W x 6" T Nice Clean Oscillating Table inside Steam Incubator Tank
159. Lot Misc. Lab Items, including:
- Fisher Controls ½" Stainless Steel Metering Valve with 4-20ma position feedback control
 - Staco Autotransformer 0-140 VAC 5 amps
 - XENON deep UV light source
 - Corning Brand Magnetic Stirrer
 - Kurz Air Velocity Meter with Two Hot Wire Anemometer Probes
 - Misc. toner and other computer switch items, as shown
160. Fischer Instrumentation Capacitance Thickness Measurement Multi Gage Includes Probe. This is a Fischerscope Multi Unit.
161. Stainless-Steel Clean Room Table 24" D x 36" Wide with two lower shelves. Table includes a Branson Model 1510 Ultrasonic Cleaner, and a BASIX Model B-400 Hot Laminator
162. Small High Temp Ni-Chrome Heater for Quick Cross Calibration of T/C's or Pyrometers to a Reference Grade Type-S T/C up to 1,150 C. Unit includes an Old Style Omega Controller with Doric Model 400 all mounted in a Small ISA 19" Desk Top Rack.
163. Misc. Sloped Front Plexiglas Drybox Nice with RF Power Port, 120 VAC Quad Outlet, Flow Meter
164. Misc. Plexiglas Box Dry Box
165. Standard Register Model 605 Image Seal Laminator Two Large Rolling Mill Rolls
166. Bell Air Products? Sloped Front Plexiglass Dust Enclosure With Small SS White Needle Size Grit Blasting System (Unit was Previously Loaded with 20 Micron Diamond Powder). Has Silicon Rubber Gripper Leaves rather than Gloves on the Arm Ports.
167. Misc. Temperature Survey Instruments, Including:
- Fluke Model 2200 B Datalogger,
 - Doric Model 245 Datalogger,
 - Leed & Northrup Millivolt Potentiometer.
168. Varian M-2 Two Inch ASA Diffusion Pump Cart with Welch Model 1402 B Duo Seal Vacuum Pump. System includes all Stainless-Steel Foreline Traps (LN2 + Oil) all Mounted on a Nice Rolling Stainless Steel Cart. System is mounted so the Top End Terminated in a KF-50 2 Inch Line for easily adding high vacuum to any small experiment. Includes all Stainless-Steel Norcal Manual Vacuum Control Valves.
169. Alcatel 3" ASA Diffusion Pump Cart with Model 2004 Roughing Pump. Nice.

170. Large Lot consisting of Varian Ion Pump Power Supplies and Ti-Ball Titanium Sublimation Pump Controller, and Substrate Heater Power Controls (and many Cables for these)

Large Vertical UHV Pump & R&D Station. Not sure what all is inside, but for sure the System contains 5 Ion Pumps and a Ti-Ball TSP Pump, 3 Each 3.25" Conflat Windows, Numerous single phase high current power feed thrus (7 Ea), 12 each 2.75" Conflat flanges with various pass thrus and a bare wire exposed BA type ion gage tube. My guess is somebody was trying to establish the world's record lowest vacuum level ever achieved with this system, but I am just guessing...This would probably make somebody a real nice "Hotel UHV" pumping system.

170-1 Misc Lot Varian Two Station Adsorption Type Vacuum Pumping System with spare parts and more.

170-2 Misc. 4" Conflat Cross with UTI RGA Head, and small Balzers Turbomolecular Pump.

170-3 Misc. 6" Conflat Multiport UHV Vacuum Chamber with many 2.75" Conflat Flanges on many Axis. Part of a MO CVD Reactor

171. Lot Misc. as Shown. Mostly Vanzetti Pyrometer readouts (parts machines only).

172. Misc. Vacuum Components Lot, Including:

- Varian Vac Ion Pump with Varian Conflat Rt. Angle Valve
- Huntington 4" Conflat Gate Valve, elbow and nipple
- Misc. Balzers Analeva, UTI, Leybold RGA Heads, including two new RGA heads in factory packaging.
- Huntington Ion Column Bellows

173. Misc. 6" Conflat Fittings/Tee, ISO Bellows and Fittings, small air-cooled diffusion pump, as shown.

173-1 Misc. Conflat Fittings and Valves, Two Each 2.75" Inlet Star Cell Ion Pumps. Other items as shown. Varian Star Cell Ion Pump Power Supplies Model 929-0181 This 19" Rack contains two Ion Pump Power Supplies.

174. Vacuum Barrier Corp. Small Air Cooled Diffusion Pump, Close Coupled to an Alcatel Model 2004 A Direct Drive Vacuum Pump, with a 5 port Valved Vacuum distribution Manifold.

175. Dennison Multipress8 Ton C-Frame Hydraulic Press

176. TM Vacuum Vacuum Drying Oven and Ante Chamber for use on Glove Boxes (Including the Type Being Sold as Lot 142/142A) Oven is TM Part Number 1203-D3014-1 and it runs on 208 VAC 1 Phase 45 amps. It has a Honeywell UDC Type controller and an Edwards Model 507 Thermocouple Type Vacuum Gage.

177. VWR Model 1410 Rough Vacuum Oven with inert gas flowmeter and vacuum control.

178. Large 6" Conflat Flanged Ion Pump. Has a nice Huntington UHV Conflat Gate Valve adapting into a 4" Conflat Cross, with several outlet ports for easy test set-up plumbing.

179. 8" Conflat Ultra High Vacuum Rated Process Observation Vessel made from 8" 6-Way Cross Fitting with Three Fixed 5.5" open Glass 8" Conflat Viewports (Glass to Kovar Type) on Top, Rear, and Side of Vessel. Front Side has Hinged Conflat Window for Easy Part Loading. Right Hand Side of Chamber has a 8" Conflat Blank Off Flange With Three Horizontal 2.75" Conflat Flanges on the Flange Centerline. The Center Port is blanked Off, while the Other Two have Varian Manual UHV 2.75" Conflat Right Angle Valves mounted to face forward and rearward. The Chamber Bottom 8" Conflat Flange has a reducer to 6" Conflat. This Chamber is sitting on a ½" Ground Aluminum Plate which Mounts on an adjustable Table Built with Bosch Type Modular Fittings. This lot also include 6 other misc. Conflat Flanges including one with 20 channels of UHP rated BNC Signal Pass-through's, and 4 each Welded Mini conflat fittings for other process set-ups. This is an R&D labs Dream UHV Research Test Vessel.

180. Misc. Lot of Glass Filled Circuit Board Dielectric sheets of many sizes and thicknesses. Lot includes storage cart.

181. Newport Optics Bench 24" x 36" including:

- Spiricon Model BPS-CO2-16-5.0 Pyrocam III Pyroelectric Camera for IR and UV Laser Beam Diagnostics and Thermal Imaging. This System includes the manuals and Software for both the Beam Imaging Camera, and the Laser Beam Profiler Model LBA-7XXPC
- Newport Piezoelectric Drive Motion Controller Model MM3000
- Newport Laser Power Meter Model 815, with large detector Area Photodiode (includes manual)
- Melles Griot, and Hughes, misc. different sizes of mostly working HeNe tube type lasers ranging up to about 10 mw
- Many different laser mounts and lens holders, along with a nice new Hamamatsu Model R374 Photomultiplier tube (with new pin socket)

182. Large Misc. Lot of optics, including: Gratings, Filters (mostly IR), lenses, slits, mirrors, beam splitters, fiber optic mounting, coupling and alignment fixtures, liquid adsorption cells with KBr, NaCl, and Sapphire windows (amongst others). Many other specials, and microscope objectives and columnators/beam spreaders. Deuterium lamp, and special lens and fiber optic sensors and other alignment holders and aspheres.

183. EGS Hevi-Duty General Purpose Step Down Transformer 15 KVA 460 VAC Delta x 208/120 VAC Y 3 Phase Transformer.

Nema Backplane Mounted Power Control System with 8 zones of Watlow Brand DIN-A-Mite 20 amp 208 VAC 3 Phase SCR 's heating control for Lot 101 Motorola Bonders. This is the only power control that we received that was designed to go with the Lot 101 Bonders. No enclosure is included.

184. 18" ID x 26" Tall Straight Length Stainless Steel Water Traced Bell Jar. Includes Seal and Seal Clamp. Nice!!

185. Two Large Speaker Cabinets (will make a nice Church)

186. Misc. Lot of Scales including Ohaus Series SD Shipping Scale and, a Litton Sweda Model 4000 Electric Scale 30 lbs, by the 0.01 lbs., Sartorius Model 6100.0G Gram Scale, 6 kG by a 0.1 gram, works fine. Lot includes Desk and SYBRON/Thermolyne 6" x 6" Lab Hot Plate, including thermocouple meter temperature readout.

187. Lot of Misc. Storage Cabinets, Nice. Larger bins include many ball bearing and thrust bearing assemblies. Smaller bins include many types of semiconductor discrete IC devices, one of the bins a wide assortment of electrical resistors. Too many items to describe but know the bearing of this lot alone are worth thousands.
188. One lot gold-plated printed circuit boards. These boards are multi-level probe card boards and have heavy gold plating. All boards were cut up and ready to feed to gold etch for precious metal recovery.
189. Lot of Misc. Tools as shown. Lot includes work bench with riser.
190. Lot of Misc. Audio-Visual Equipment and Tool Box.
191. One Drum of Misc. Gold Scrap, mostly pins and specialty connectors.
192. Enerpac Corp. 25 Ton Hydraulic C-Frame Press. Press includes new Hydraphore brand hydraulic hand pump (Like a P-80) with new 10,000 PSIG jack hose. This is a nice general purpose hydraulic press for general shop use. Does not include the roller cart shown in this photo.
193. One Lot, 4 Each, Misc. Aluminum Bread Racks, Many Adjustable Slot Levels. Includes Trays as shown.
194. Misc. Lot of Air Operated Cylinder, and Linear Actuation Devices. Lot Includes 12 each Thompson Linear Slide Pillow Blocks and multiple Lintech Linear Slide Supports (3-Each 1" OD x 60" Length, 3 Each Thompson P/N: SR-12). This lot is a robotics lab dream come true.
195. Misc. Lot of 2.75" Conflat Actuators and Lots More.
196. Ametek Spring Tester Stand, and Robotic Cauterizing Hole Punch and Lathe Bed. Topaz Line Conditioning Isolation Transformer, Many other items.
197. Misc. Lot of KF Flanged Nipples and other Stainless-Steel Tube Fittings. Lot includes Rolling Cart.
198. MKS Model 653 Exhaust Throttle Valve (like new) many ISO Fittings and Adaptors.
199. Misc. Lot of Vacuum Fittings and Small Varian Ion Pump, 6" ISO Flanged Elbow, MKS Bake-out Heaters too many to list.
200. Tektronix's Model 2235 100 MHz Oscilloscope and Rolling Cart. Includes misc. Strip Chart Recorder Shown too.
201. Misc. Lot of Blue Fluoroware Brand Model 34605 Wafer Storage Boxes Empty (Sealed New). Lot includes Portable 5 Gallon Shop Air Tire Refill Vessel.
202. Misc. Vacuum Vessel 9.5" ID x 13" Straight Length Clean 100 mm Wafer Planetary, 18" Vacuum Chamber Lid (from an Edwards Sputter Coater).

203. Two Nice Parr Bomb Style High Pressure Reaction Vessels, Both Valved, One Heated and Instrumented Nicely. Misc. Stamped Alloy 42 or Kovar Lead Frames
204. Misc. Lot Includes: Link Analytical Pentafet EDAX Type X-Ray Detector set up with vacuum Bellows Stage for SEM Use. Lot also Includes Deep Drawn Clean room Style Shipping Containers and Omega Brand Ph Meter, other Items as Shown.
205. Large Misc. Lot of Vacuum Pump Foreline and Exhaust Filters. Lot also includes Misc. Lot of Five Each MDC, Huntington, Stokes Bakeable Molecular Sieve Type KF-40 Foreline Traps.
206. Misc. Lot of Air and Water Flow Control Manifolds. This lot also Includes Small Remnant Teflon, Peek other Glass Filled Plastic Bars and Sheets.
207. Misc. Lot of Plumbing Items including a new Finned Air Heat Exchanger, and other misc. plumbing items. This lot also includes the Rolling Cart shown.
208. Lot of Small Lab Furnaces. Includes Lindberg Brand 1" x ~12" Horizontal Tube Furnace with Stainless Steel 5/8" OD retort sublimation tube, Model Number 55035 good to 1010 C, and a Small ~12" Cubed Effective size Sealed Inert Gas Box Oven (with small convection fan and flow meter), System also includes 8 Channels of BNC signal Pass-through's into the Oven and a nice Teflon Photodiode "Burn-In Test" Fixture. Includes 4 large area Photodiodes. This lot Includes the Nice Stainless Steel Rolling Cart Shown.
209. Misc. Furnace Lot Including:
- Nice Blue-M Lab Heat Muffle Furnace 5"W x 4" T x 9" D. Model M-15A-1A good to 1,000 C Nice Clean Furnace
 - Sartorius Model 1364 MP Digital Scale 4,000.00 grams
 - Lindbergh/Blue-M 1" ID x ~12" Tube Furnace with Honeywell UDC Ramp Soak and Overtemp Controllers, as Shown.
210. Misc. Lot Lab Equip. Including:
- Micricon Model 823 Furnace Controllers (2X)
 - AJ 500 Arc Sectioner Diamond Wafer Saw
 - Small 19" Rack Enclosure
 - Varian Bakeout Heater Control
 - Nice High Pressure DI Water Pump (Air over water type) 3000 PSIG Includes Internal Ultra Filter in a nice Stainless-Steel Sound Proof Enclosure
 - (F)RPS Model HA-UPR500A Short Arc Pulsing Power Supply and Regulator.
211. Rodgers Corp Custom Designed Powder Metallurgical Imprinted Part Replication Presses (X3) with Nice Safe OSHA Approved "Two Hands Required" Press Controls. Lot Includes Support Table Shown.
212. Agilent Custom Air Operated Press Frame Tester with a VICI Valco Valve Controller with Air Op Interlock. Valco Valve and Controller are known to be working.

213. One Lot Misc. Glow Bars and Glow Bar Connectors, Too Many to List, but Enough to Build Several Nice Brick Ovens Running at 1400° C!

214. Misc. Lot of Small Pumps, as shown. Lot includes 2 Large Air Operated Cylinders and 1 Oil Cooler Heat Exchanger.

215. Misc. Large Lot of Pumps, as shown. Lots also includes several Variac Variable Transformers and 1 Large High Current filament transformer.

216. Misc. Lot of Pumps, ranging in size up to ~10 HP most are Either Gould, or March Pumps. There is also a nice Crane Chemical Metering Pump included in this lot, as well as a small air compressor. Total = 15 pumps. Rack Shelving Unit Shown is included with this lot.

217. Misc. Lot of Lighting and specialty glass items, including:

- Two Open Cases of 1.5" OD x 48" Pyrex Glass Tubes
- 5 Each Ground glass Lid Bench top Desiccant Jars
- Two Cases of F96T12 Fluorescent Light Bulbs
- Numerous 8 Ft. Fluorescent Light Fixtures
- A handheld (Magnaflux Style) UV Inspection Lamp and Driver
- Quartz Heat Lamps around ~20" to 18" long, a large lot of High Alumina Tubes in many sizes.
- Other ceramic tubes including a reduced diameter Mullite Tube ~3.5" OD x 36" Long
- Many smaller tubes and other new emergency lighting fixtures. This lot also includes the rack shelving shown.

218. Two Vitrified Quartz Tubes ~13" OD x 44" Long. These heavy wall (1/2" +/-) are perfect for any induction heating application needing inert gas cover.

219. Lot of Misc. Electronics and Lab Items, Including:

- Hewlett Packard (HP) Model 4260 Universal Bridge
- HP Model 400E AC Voltmeter
- PWR Inc. Model-I Ampere Time Meter
- Balzers Model RVG 040 Vacuum Valve Control Unit
- Veeco Model RG-830 Ionization Gage Control
- Vacuum General Model 80-4 Mass Flow Control Readout
- EICO Model 380 Color Bar Generator
- Small 1/8 Din Panel DC Voltmeter and Enclosure
- Signet Scientific Model P/N: P58440 Flowmeter Display
- ATC Re-settable Timer Model Number 3246R 999 Min.
- 2 Each Trio Tech Model A-481-10 Bubble Tester
- Veeco Control Console for Evaporator Includes a nice Varian Model 801 T/C Vacuum Readout, other Omega Heater Controls and Current Output Meters.

220. Misc. Lot of Power Controllers, Mostly Honeywell, Omega, Athena, Weather Measure, West, etc. This Lot also includes an MKS Baratron Readout Model 170 M-27B with Range Multiplier Model 170M-6B, a small ½ rack with 4 Each MKS Model 260 Mass Flow Controllers. This lot also includes a nice CH Model G70 frequency generator (up to 50 MHz), a Matheson Model 8550 Electronic Scale Readout, and a Balzers GLS 400 Lamp Source

221. Large Lot of Perkin Elmer Brand Hollow Cathode Lamps for ICP/AAS Analysis (These go with the Perkin Elmer ICP AAS Unit Being Sold as Lot 126 Above). Includes about 51 Tubes including many precious metals (Rh + More!!!). Lot also includes a small HeNe Laser, a CCTV Camera, and a Cavitation Intensity Meter.

222. Lot of Misc. Optics Related, and Other Lab Equip. Including:

- Nice Custom Halogen Light Source With Twin Polarizing Filters, a Neutral Diffuser Filter, and an~ 450 nM Green Light Filter. This was custom Built in a Nice Black Aluminum Enclosure and has a Nice Adjustable 1.5" DIA Iris so The User Can Select the Spot Size or Power Level.
- Oriel Arc Lamp Power Supply
- Oriel Arc Lamp Source Model 6186
- HP Model 3468B 4 Point Spreading Multimeter
- GE RS-232 Adaptor for RS-232 to RS-422 Adaptor
- Spectra Physics HeNe Laser Power Supplies (X-2)
- Various Hughes HeNe Lasers (X-7)
- Misc. Fluorescent Light Ballasts (X-9)
- Lauda Model B-1 Constant Temp Bath Heater 0-100 C
- Klingner Micrometer Stage X-Y-Z ~0.200" in each axis For precise optical alignment.
- Analogic Model Digital-II Model Number AN6520-8A-110 Temperature Calibrator

223. Ultrasonic Disintegrator/Cavitation Horn Ceramic Hole Machining System Looks to be about 1KW Macbeth process measurement company densitometer model RD -914 with probe, (2) MISC AMAT back plane heaters (100mm 150mm) with shipping containers, (2) each Ludlum Style handheld pancake Geiger Mueller wands, (6) each UDC 200x ramp soak controllers / over temp controllers known good, (1) Mitsubishi thermal image printer, (1) Sony model UP-890MD thermal image printers, MISC thermostat covers

224. MISC lot including (3) each new in box model TG511A Versaguard thermostat covers with keys, (2) LG motion sensing cameras model LVC-CS100E black and white cameras, Buchi rotovap R124 parts machine, Buchi Model RE111 parts machine with stand, (2) Pyro digital fiber optic pyrometer model 500 Mark II, Coherent commercial products division model 201 optical power meter, (1) MISC air sampling pump, Climet model 208 particle analyzer for clean room certification and modeling, Perkin Elmer Ultek oscillocorder, MISC other antique instruments, , MISC Buchi rotavap stand, Condor model 12 fan and misc circuit breakers

225. Coulter multisizer particle size analysis system electronics part machine only, (1) enclosed constant temperature bath/calorimeter unknown manufacturer very nice

226. MISC lot Teflon immersion heaters, Chromolox and Gloquartz, Endico immersion type drum heaters, all 2" male pipe thread, ranging from 7.5kw to 15kw, MISC ceramic immersion heaters spiral

wound on ceramic 208v heaters, MISC Nichrome large area air heater 12"x 30" duct air heater, MISC other quick heat, strap on heaters, (4) Each Vandorn part number 302454 clamp on heaters 5" id by 3" active length, 230 V 1700W barrel heaters

227. Lot misc. lab equipment including, Like new Leeds and Northrup temperature potentiometer model 8693, Waters model 430 conductivity detector, Swan model 350 single side band HAM radio transceiver (perfect for your bunker), Quadgroup load cell 12VDC, Watlow ceramic cast in heaters 2 clam shells part number VS108A12S 24V AC 1500 Watt (3000W) Brand NEW no box. Makes a heated cylinder 8" ID x 12" Long to 1,200°C, MISC cut ceramic insulation board for Watlow, (2) lots quartz 8" x 8" pure quartz, (1) 6" x 6" 7000 glass substraights approximately 50 pieces, (2) each Sweeney static meters model 127F appears like new.

228. MISC gear pumps, small horsepower motors and MTS Systems Corp high temperature furnace with extensometer strain gauge measuring system, multiple type K thermocouples, designed for 1" samples, active length of 7", water cooled extensometer model number 652.01A SN 162

229. MISC electric motors, most under 1.5 HP

230. Coulter Multisizer II, particle size determination apparatus, with sampling stand 2A, system ID number 32623, needs CPU and software update but otherwise was in good working order when moved from services. Lot number 440 has some similar details that may be useful as a parts machine to support this unit.

231. Multiple quick heat and insulation systems, (1) Arizona gear and manufacturing US Vibra model 2996 ultrasonic part delivery system, Grandville Phillips Convector gauge model 275 readout, Omega Engineering automatic signal scanner dataplex 10, 10 channel type K readout, (1) Lot MISC custom fiber drawing and pulling machines setup to control both torque and speed on fibers being pulled from a melting crucible includes drum winding accessories.

232. MISC fiber drawing controls goes with LOT 231 ancillary controls, MISC graphite crucible supports, CM Furnace Company rapid temp furnace missing heating elements and control system model 1608 very nice insulation package, (5) Horning replacement lab hot plate 10x11", MISC 4.5 x 9 x 3" high alumina fire bricks New in Box 10 Total, Assembly Automation ultrasonic part delivery system model SA-1M approximately 7" ID setup for parts approximately 3/8" OD

233. MISC motors, mostly 3-5 HP for vacuum pumps and other types of systems, multiple brands.

234. MISC 6" VRC ASA right angle valves manual, 6" ASA by ISO custom adapter, 10" ASA valve actuator

235. MISC Skinner & Humphrey & other solenoid valves, Process Technologies Teflon coated spiral round immersion heaters pancake style model HXFL6-208-13-R18-PLU 29A 208V, MISC Lufran Teflon coated nichrome immersion tank heater 11" x 8" x 7.75" model TCC-110 brand new unused, Watlow 1500W 208V immersion tank heater 3" OD x 5" L with an insertion depth of 11" New and Unused, Misc Singapore Precision Stamping lead frame assemblies.

236. MISC Lab and quick heat items, Integrated circuit developments Teflon coated nichrome tank heater 9" x 14" HeatE Flex 2250 W 208V ac 10.8A 19.2 Ohm, Misc Hammond plating 10" quartz lamp

reflectors gold plated, Ideal vacuum pump 100mm ID Iso flange parts only (bad blades), Consolidated Vacuum Corporation diffusion pump model VMF21 small air cooled diffusion pump as shown, Stocker and Yale Company series 9 circular florescent illuminator with transformer and set screws, Welch Allen model 74710 Otolaryngologist ear and eye inspection system, Sartorius high pressure SS filter assembly 5"OD x 8" active length, toolbox dust covers for Lowes Cobalt rolling toolboxes, Process Technologies Ion coated tank immersion heater 10" x 19" model number 3HXOL6410-19-R18-PIII 6KW 480V 7.5A New never used, MISC Teflon coated nichrome heater 7" x 12" 208 V, Lufran heater 12" x 11" x 5" deep Teflon heater, Calrod stovetop heater approx. 2KW 208V includes beauty drum, Pipe hangers, FLR and Gas filters, used hairpin heating elements Molybdenum, MISC spare parts for Harbor Freight air compressor fan bet pulley assembly and fan.

237. MISC VRC vacuum valves and more, 1.5" NPT, 2" 4" 6" ASA KF 50 flange gate valves, box of MISC 3"-4" ISO bellows multiple (Over 1k\$ worth of bellows)

238. MISC ASA Pipes nipples and adapters

239. Eberbach Corporation Electro Analysis Apparatus Catalogue number 1000 accelerated corrosion testing fixture including power supplies, VWR hot plate sample heaters, Model 210 mini hotplate sample heaters, External VWR model 500-2 power supply, includes quartz stirring adapters stage supports and SS roller cart included. This lot is everything you need to conduct accelerated electrochemical corrosion testing studies and is a corrosion scientists dream.

240. Honeywell DPR recorders, Leeds and Northrup recorders, large lot of Honeywell model 100 circular charts for temperature recording, cart included, parts machines only.

241. CTI Cryogenics Cryotor 8 cryopump model 8033167 with temperature readout.

241.-1 CTI Model 8300 Helium Compressor with a Model 8001 Cryopump controller.

241.-2 CTI Model 8300 Helium Compressor.

241.-3 CTI 8 Model 8F 6" ASA Flange Right Angle Head Cryopump

241.-4 CTI 8 Model 8F 6" ASA Flange Right Angle Head Cryopump

241.-5 CTI 8 Onboard 8 Cryopump with Temp Readout

241.-6 CTI Cryotorr 8 with External Temp Readout

241.-7 Misc. Lot Cryopump Hoses, splitters, elbows and a new in the box Compressor Absorber Model 8500.

241.-8 CTI Model SCW Helium Compressor

241.-9 CTI Model M/C Helium Compressor

241.-10 CTI Model SCW Helium Compressor

- 241.-11 CTI Model SCW Helium Compressor
- 241.-12 CTI Model SCW Helium Compressor
- 241.-13 CTI Model SCW Helium Compressor
- 241.-14 CTI Model 8510 Dual Head Helium Compressor
242. Phase 2 Brand 2 Ton Hand Arbor Press
243. Zeiss Microscope Model Unknown No Objectives
244. Misc. Air Op Stamping Press/Cutter
245. IVI Power Supply and Planetary Drive
246. Misc. Stepper Motor Driven Stage
247. Small CV/I Tungsten Hot Zone Multifoil Shield Pack 8 Kg approx. weight.
248. Canberra Series 20 MCA with Integral 0-1000 VDC Bias Power Supply.
249. BR Instruments Model 800 Micro Molecular Still with Magnetic Coupled Molecular Rotor Drive. Lot includes two misc. Neon Sign High Voltage Power Supplier.
250. McBeth TD504 Color Densitometer
251. Misc. Electronics
252. Misc. 42" Forklift Forks, box of Shop Air Hoses and Nozzles. Bin of misc. Tie down and Gate Straps.
Photographic Illumination Stand, includes a small gooseneck Halogen Light stand, and Snap On 1750 PSIG Power Washer (Unit has dirty check valves).
253. Canberra Model 800 Nim Bin with many modules, including:
- Three Each Canberra Model 3105 0-5KV High Voltage Power Supplies.
 - Canberra 816 Amp and 831 SCA,
 - Ortec Model 435 AMP and 465 SCA
 - Ortec 403 A Time Pickoff Control
 - Ortec Model 431 Timer-Scalar
254. Deluxe Canberra Model 2000 NIM Bin with Front Panel Taps Includes the following Mostly Gamma Ray Spec. All Canberra NIM BINS:
- Two Each Model 30020 High Voltage Power Supplies 0-3KV
 - Three Model 2015A AMP TSCA
 - Model 1776 Dual Counter Timer
 - Model 2071 A Dual Counter Timer

- Model 1480 Linear Rate Meter
255. Tracor Northern MCA Model NS-750 X-Ray Spectrometer
256. Briggs & Stratton S-400T Generac Generator 4KW 120 VAC (33 Amps) and 240 VAC 16.7 Amps (Twistlock) on roller cart.
257. Black & Webster Model Number 01015-14 Robotron Weld Head C-Frame Spot Welder 10 KVA 440 VAC
258. HNU Systems Si (Li) X-Ray Detector Model 7301-6ST with 0.3mm Beryllium Window. Set up to Run at 1000 VDC Bias. Includes a MVE Model AL-27 Cryostat ~30 Liter Fill. This lot also includes a NaI (TI) Scintillation Detector, Deep Well Scintillation Detector with a 2" ID x 2.5" Deep Well Model 200232
259. MVE Model Lab-30 LN2 Storage Dewar Flask
260. Nucleus Inc. Quantum 8 MCA perfect for Gamma Ray Spectroscopy
261. Misc. Lot of NIM BINs and Dosimeter Chargers and a box of MHV, and SHV power leads.
262. Lot of Misc. NIM BINS as Shown, and an Eberline Model PS-2 Thin Foil Window Large Area Radiation Hand Held Detector. Needs Work.
263. Canberra Model 2100 NIM BIN with misc. Amplifier, SCA as shown. This lot includes a lot of 3 different personal Geiger counters and Ratemeters including Eberline Instruments Corp Model PRS-1 Rascal Portable Ludlum Model 14-B and a Victoreen Model 493 Geiger counter. Lot also includes a Hewlett Packard Frequency Counter 5381A 80 Hhz.
264. Ortec Norland Model 5500 Multichannel Analyzer (MC) includes internal AMP and ULD Perfect for Gamma Ray Spectroscopy or Other Bin Counting Applications.
Ortec Model 4001 M Mini-NIM BIN Rack including the following ORTEC NIM BIN Modules:
- Model 456 High Voltage Power Supply 0-3KV
 - Two Each Model 590A Amp and Timing Single Channel Amps
 - Model 671 Timer and Counter.
 - Teledyne Isotopes S-1212-T NaI (TI) Scintillation Detector with close coupled PMT and Pre-Amp Ready for High Energy Gamma Ray Detection.
Mostly Complete Gamma Ray Spectroscopy Set Up. Perfect for your new Bunker.
265. HBS Equipment Co. Oscillating Plating Tank and Power Supply 0-15 VDC 0-10 Amps. Lot also contains another HBS Equipment Larger Plating Power Supply 0-15 VDC 0-50 Amp, This Lot also Includes the Rolling Stainless Steel Cart
266. Lot of Misc. Electronics, Including:
- EPSCO Brand Filtered DC Power Supply Model PS-1000-1250-150 VDC, 0-15 Amps
 - Nikon UFX-II Camera Control
 - Norland Ino Tech Model 5300 Multichannel Analyzer

267. Intelligent Systems For Industry Custom Automated Part Marking Machine (This was Built for Motorola Paging Products). System Includes 2 Each Vexta Model PH266-02 12 VDC Stepper Motors (1.8/Step) and Lots More. It looks to have a Red Silicone Rubber Die Transport Marking System but I am Really Not Sure. This Lot Includes the Stainless Steel Table it is on, as well as a lot of about 500 +/- Ferrites Model Number PC303530A80
268. Burr King Brand Vibratory Polisher Model Number Vibra-Burr Model 150 S Complete with Media
269. Buehler Model 41-1500-160 Single Station Metallographic Lap
270. Buehler Vibromet Polisher Model No. 67-1507-160
271. Fisher Sci Model 225 Centrifuge
272. Vcella Kilns Box Furnace Model 320 S/N: 4062 480 VAC 36 Amps 32"W x 32" D x 32" Tall Straight Length Systems needs some element work and Power Controls appear to be incomplete. Still a Nice Box Furnace
Pallet of Ceramic Setter Plates Mostly MgO /Cordierite some smaller Alumina Setters (~700 LBM)
273. Wilson Model 4JR Rockwell Hardness Tester (Parts Machine Only) Missing Weights.
274. Wilson Model S TT 88 Rockwell Hardness Tester (Parts Machine Only) All weights are missing.
275. Central Machinery 8" Bench Top Drill Press w/ Keyless ½" Chuck, Dexter Hysol Hot Glue Gun Rt. Angle Head Industrial Style.
276. Misc. Lot Honeywell DCP-7700 Controllers and DPR-1500 Recorders. Spare Parts Machines Only. Lot Includes Roller Cart Shown.
277. Refrac Systems Custom GCA Vacuum Industries System 7 Vacuum Furnace. This small vacuum furnace was re-built by Refrac Systems to contain a small graphite furnace sized at 8"W x 8"T x 15" Deep that uses tungsten heating elements to achieve temps of ~1,800 C maximum. We made our own element using 7 x 0.030" stranded tungsten It is currently configured to have a Type-S control thermocouple and one Type-C Over temp T/C, so this baby can run hot, in spite of only needing about 15 KVA of 208 VAC 3 Phase power to run.
We had a great welder we know re-weld every chamber weld on this all stainless system using a combination of high chromium weld rods to insure an ultra-low leak rate. It was professionally powder painted after the welding. It is pumped by a Varian VHS-6 diffusing pump and has "fail closed" Norcal products KF-40 valves for easy maintenance. Roughing is accomplished quickly using a Welch Duo Seal Model 1374B 23 CFM two stage vacuum pump, and the system has another Welch Duo Seal Pump Model 1402 B pump acting as the fore line holding pump. It previously achieved mid 10-6 Torr vacuum levels but is also plumbed with both Hydrogen and inert gas partial pressure manual controls. Use hydrogen only at your own risk.
I assume no responsibility for any end user that uses hydrogen with this system (but we did it a lot at 2-4 x 10-4 Torr which was close to saturating the diff pump fore line).

This Lot Includes a spare Scott connected power supply for this system, and another used System 7 Vacuum Chamber.

278. AP Green Assy Cup Style MgO Crucibles

279. Amersil Fused Quartz Products Round Bottom Crucibles Approx 4.375" OD x 4.5" OAL Spherical Bottom (Matched Medium Sized Graphite Crucibles later in this auction).

280. Amersil Fused Quartz Round Bottom Crucibles Small and Large Mixed S= Approx 4" OD x 4" OAL L= 4.5" x 4.5"

281. Amersil Fused Quartz Round Bottom Crucibles Medium Size = 4.25" OD x 4.25" Long

282. Miscellaneous lot of items including quartz bell jars 10 ID x 18 Length, Misc. Quartz and Pyrex tubes too many to list, threaded laboratory glass plumbing, one lot Ace threaded glass and fittings, including T's, Take-offs, Bulkhead fittings, misc. other glass items. Lot includes rack shown.

283. Misc. lot including:

- Amoco Thornel Fiber, Graphite Fiber Spools, Product K1100 2K grade 320 NT (7 Rolls)
- 2 Rolls Misc. S-Glass, and E-Glass Woven Fiber Clothe.
- Misc. Board Insulation Products, Mostly FRAX-type Boards, Additional Misc. SALI Boards
- Misc. Silicon Carbide Setters
- Misc. Quartz and Other Glass Items, This Lot Includes the Shelving Unit. No Foreign Sales This Lot.
- Inficon Freon XTRACT-R, Vacuum Pump Freon Recovery Unit

284. Mullen Tube Furnace 3" ID 24" Heat Active Length, Like New

285. CM Furnace Inc. Rapid Temp Furnace, Molly-Di-Sillicide Heating Element Tube Furnace 3" ID x 2' Working Length, Good To 1,700°C, Includes Platinum Thermocouples. System is Like New but Needs Paint and Power Supply. Includes Alumina Tube.

286. NETZSCH Instruments Company Old Style Dilatometer Test Frame and Furnace. Needs Controller. Good Spare Parts Machine.

287. Applied Test Systems Furnace and Controller Series (Model Number) 3110, 760 Watts Max Temp 1,850°F, 1" ID x 18" OAL with Type-K Controller

288. Marshall Furnace Company Tub Furnace 1.5" ID x 30" OAL

289. Box of Misc. Heating Elements for JASC, Box of Used ¼" Rod Hairpin Style Molybdenum Heating Elements

290. Centorr Vacuum Industries 40 Ton Vacuum Hot Press Series 3600, Model 3630-40 VI Job Number 4-2061. System Runs on 141 KVA 460 VAC (188 Amp Feed) and has both an all Tungsten and All Graphite Furnace Option both configured as a three phase vertical hot zone. System is Vacuum Pumped with a Varian VHS-10 Diffusion pump, backed by a Stokes Model 212 Roughing Pump. The Stokes 212

Pump also has an external Oil Filter Cart. The diff pump is held by a Welch Model 1402B Duo Seal Vacuum Pump.

Hydraulics' Consists of a Parker ~14" Long Stroke Double Acting 40 Ton Cylinder driving a 2.5" OD Water Cooled Upper Ram Ram. Hydraulics are powered by a Pasadena Hydraulics Pump Cart that uses a Parker PACV Type 0-3000 PSIG positive displacement pump with a Moog Servo Valve.

Controls for this System Include Two Honeywell Model 700 Controller (One for Heat, and one for Force Control), one Honeywell UDC 2000 Overtemp Control, and One Honeywell DPR-1500 Chart Recorder. Vacuum monitoring is measured using a Varian Model 843 Combined T/C and Ion Gage Controller.

This system needs some chamber and Hot Zone Rework, but would easily save somebody over half on the purchase price of a new Vacuum Hot Press.

291. ULVAC Vacuum Equipment Rack, Contains The Following Items:

- Two Each, Model D-650DK Rotary Vacuum Pumps Close Coupled to a Mechanical Booster Pump Model PMB001C (115 Cubic Meters per Hour)
- Two Additional Model D-650DK Rotary Vacuum Pumps (618 LPM) That's Two Full Blower Stacks and Two Additional Roughing Pumps. Removed from Working System, Includes an additional 6 unknown Power Transformers that look to be ~3 to 5KW each. Nice!!

292. TM Vacuum Products Refrac Custom Dry Box. Used for Powder Metal Applications with Pyrophoric Powders. This is a tight Box.

293. Refrac Systems Custom Dry Box Storage System for Lithium Metal. Includes about 20 LBM (??) of Ultra High Purity Lithium Purchased from FMC Lithcoa in Bessemer City North Carolina. Each Ingot is individually wrapped in a sealed Mylar Bag, and Has Been Stored Under Argon. This was the Highest Purity Lithium Money Could Buy at about 6N purity. Each Ingot is 1 5/32 OD x 4" Long and was sized to fit into our Extruder list as Lot 294 Below.

294. Refrac Systems Custom Stainless Steel 8 Port Glove Box Set up With Parker Series 2A Horizontal Press Frame Using Parker Hydraulic Cylinder 04.00 J2HU13A 13.000 as Needed to Extrude Alkali Metal Wire and Shapes. The Parker Cylinder is Pumped Using a Nice 0-3000 PSIG Hydraulic pump cart that has an integral forced air-cooling heat exchanger rated for continuous operation and includes a ram motion speed control. We Successfully Extruded Lithium Wire Directly into Heat Pipes Using This System. A Battery Guy could easily use this to make custom extruded Alkali Metal Wire or Flat Ribbon Parts for Advanced Battery Applications. System has a Nice Plexiglass Dual Door Vacuum Ante Chamber pumped with an Alcatel Model 2008 Two Stage Direct Drive Vacuum Pump. In its heyday this box went to ~10 PPM oxygen after a day of purging.

295. Perkin-Elmer Grating Infrared Spectrophotometer Model 457. Misc. 19" Rack with Position and Force Control Relay Logic Block.

296. E-Gun Includes Self-Bias Control, E-Gun deflector control, E-Gun Power Control, OL, CL, and ACC Output Voltage Control Units, Includes Misc. Lot of VCR Stainless Plumbing Parts.

297. Misc. Lot Wire, Driver Harris, Wilbur D-Driver, Misc. Rodar and Other High Temp Hookup Wire, Including Tophet C-wire, Misc. Tungsten and Molybdenum Wire and Ribbons, and Old Style Polaroid Camera Model ED-10.

298. Lot includes 2 Neles-Jamesbury 3" ASA Stainless Steel Butterfly Control Valves, Complete with Air Actuator and Position Feedback Module.
299. Desktop Mounted Teledyne Analytical Instruments Trace Oxygen Analyzer Complete with Sampling Pump and Furnace Port Controls, Includes 19" ASA Rack Power Strip.
300. 11 Misc. Transformers and Other Power Controls
301. Single Zone Temperature Controller.
302. Unknown Mfg. AMAT Large Semiconductor process Bottom Loading Heater/Kiln System. Clean & Heavy.
303. Skutt Kiln Model 1027 High Temp Kiln with Controller 2 Heated Sections about 24" tall with Base and Lid
304. Skutt Kiln Model 1027 High Temp Kiln with Controller 2 Heated Sections about 24" tall with Base & Lid
305. Skutt Kiln Model KM1027 (??) Sections look Identical, but three heated rings with Base and Lid (No Power Controls on this lot). 208 Volt, 3-phase running on 29.3 Amps.
306. General Automation 19" Rack, 51" Height of Rack Space, Includes NKS Baratron Pressure Readout and Control Systems and Other 19" Rack Instruments.
307. 19" ASA Relay Rack on Wheels with Misc. Vacuum and Furnace Controls and a Large SCR Power Supply, 0-300 Amps DC at 0-10 Volts DC.
308. Misc. 19" ASA Rack 61.25" Height of Rack Space, Rack Contains Robert Shaw Assoc. 7.5 kW Instrument Transformer and Misc. Furnace Power Controls.
309. Semi Gas Systems Inc. Specialty Gas Cabinet with Nanochem EPI Hydrogen Purifier
310. Refrac Systems Custom 10 Ton Induction Hot Press for Rough Vacuum and Controlled Gas System Use. Lepel Model T-10-3-KC-TL High Frequency Induction Power Supply with Manuals and Controller, Unit Operates on 25.4 KW large number of induction coils, and a box of Diafilm not for use with this press.
311. U.S. Stoneware Corp. Gear-Motor Driven 2-station Jar Mill, Complete with 2 Porcelain ½ Gallon Jars with YSZ Media.
312. Refrac Systems Custom 18" Diameter x 26" Height Bell Jar Reactor with Stainless Steel Safety Screen and Lifting Stud Mounted on an Elevated Support Above a Nice Stainless Steel Table, Internal Reactor Includes Powder Metal Feed Auger Drive with High Temperature Tungsten Drop Tower Tube Furnace Useable to 1800° C. System was Developed to Densify Low Density "BB" Shot Sized Particles to Higher Density. Base plate Includes Inerting, Rotary-motion, and High Current Power Feed throughs.

313. Thermo Forma Scientific Enviroscan Freezer, Minus 86° C Ultra-Low Temperature Freezer.

314. Thermo Scientific Forma Brand 8600 Series Ultra Low Temperature Freezer, Model 8656, Unit Complete with Keys, Has 5 Levels.

315. 19" ASA Rack, Includes Physical Acoustic Corp. Model 4300 Count Rate analyzer for PINDT Accelerometer Acoustic Particle Testing, an Oriel Brand Model 8180 Timer Integrator, United Detector Technology Model 61 Optometer, Misc. HP Power Supplies and Frequency Counters and a Canberra Model 2000 NIM BIN with Many Custom NIM BIN Models Developed by Los Alamos. No Foreign Sales this Lot.

Optima Enclosures Co. 19" ASA Rack 77.25" Tall, Includes 3 shelves, a Power Strip and Nice Wheels.

316. Sputtered Films Corp. Standard 19" ASA Rack 70" Tall, on Wheels, Including the Following Items:

- Krohn-Hite Model 3342R Kalman Filter
- Hewlett-Packard Model 7044B xy-Recorder nice,
- Model 7040A xy-Recorder
- Numerous 19" Rack Cover Plates~4U Size.
- Sputtered Films Corp. Standard 19" ASA Rack 70" Tall, on Wheels.

317. Misc. 19" Rack 28" Height, Electronic Measurements Inc. TCR Power Supply 0-300 Volts VDC, 0-3 Amps, Misc. Varian Multi-gage Vacuum Readout Parts Machine Only Centorr Assoc. Tungsten Furnace Power Supply Single-Phase Model 15-1X2-W-M-EPO-0-A-18 Serial Number 15-2249. Item runs on 240 VAC 50 Amps 1 Phase in and ~10 Volts out. This looks to have been a drive for some type of small tungsten furnace used for fiber optic pulling, but can't be sure without talking to Centorr. Looks to be a nice clean small Tungsten Filament Furnace Power Supply.

318. Sybron/Barnstad Model FI-Stream Glass Still, Double Boiler Unit, 6kW 240 volt, includes 10 gal. DI Water Storage Tank and Table.

319. Refrac Systems Custom Bell Jar High Vacuum Test Cart. System Has a nice 18" OD x 14" Tall (Straight Length) Glass Bell Jar with Black Safety Implosion Grid that sits on a 7" Tall Stainless-Steel Feed Through Collar that Has 8 each KF-50 Access Ports. The net Vacuum Chamber Sits down on a 3/4" Thick x 0" OD Stainless-Steel Base plate that Sits on top of a nice Stainless Steel Roller Cart that measures 30" Deep x 36" Wide. The base plate has a 6" ASA Pipe and Vacuum Flange that Has a nice 6" VRC Manually Actuated Gate Valve with an Agilent/Varian HS-6 Diffusion Pump Mounted Vertically Below the Table. The all Stainless-Steel KF-40 Foreline Plumbing, includes Norcal Products Manual Valves, and a KF-40Bellows that Connects the System to a Sargent Welch Duo-Seal Model 1374B Roughing Pump. The Feed through Collar is equipped with two KF-25 Norcal Valves, a High Current Electrical Feed through, and a port plumbed with a High-Pressure Gas Feed Line Running Thru an Ultra-Torr Fitting. We used this system to fill components with 3,000 PSIG Helium, and would then Helium Leak Detect the Outside of the Pressurized Parts Under High Vacuum Looking for Any Helium Leakage that Made it to the Diffusion Pump Foreline. This method dramatically magnifies the potential to find leaks in the << 10-11 Torr-L/Sec range, and is a great way to test strong parts for ultra-low leakage levels.

320. Refrac Systems Custom Small Bell Jas Test Fixture. The System Includes a 10" OD x 8" Straight Length Glass Bell Jar with a Black Painted Implosion Safety Cover Screen. The System sits on a Stainless-Steel Feed through Collar, that includes Two Conax High Current MTG Type Glands with 1/2" NPT Male

Threads Mounting into Female Threaded Ports Welded in the Collar, Two 2.75" Conflat Ports (that are currently adapted down to KF fittings as Shown). The Collar also includes Two 3/4" Female NPT Port that are plumbed with a 3/4" Ball Valves. One has gas control and metering valves included, and the other has a 0.75" UltraTorr Fitting with a BA Ion Gage Tube. This System is High Vacuum Pumped using a Varian 2" M-2 Diffusion Pump, that Includes a Varian Liquid Nitrogen Trap. System Rough Vacuum is Achieved using an Alcatel Model 2008 (?) Direct Drive Pump and Holding is Maintained using a Sargent Welch Duo-Seal Model 1400 B Belt Driven Vacuum Pump. This System Used to Have an Induction Power Feed Thru Mounted in Its Collar, but It was Removed When we Sold the Smaller LEPEL RF supply that it had previously used. This System was formerly used to Evaluate Gas Metal and Metal-Metal Reactions at Elevated Temperature and to reduce samples for trace metals analysis.

321. UTI-100C RGA Head, with Varian Ion Pump (Control for this head is Lot 323 Below).

322. Accessory Parts for Small Bell Jar Furnace. Omega Small Strip Chart Recorder, Trio-Tech Model 461 Polarized Light Bubble Tester

323. 19" ISA Rack of Instruments, on a Nice Wheeled Cart, Including:

- Vacuum Industries/Granville Phillips Model 270 Ion Gage and Twin Thermocouple Gage Tube Read Outs
 - Varian Model 845 Digital Vacuum Ionization Gage with Twin Thermocouple Gage Tube Read Outs
- The Fredericks Company Televac Model 7AC ? Ion Gage and Twin Thermocouple Gage Tube Read Outs
- UTI Model 100 C, 0-100 AMU Residual Gas Analyzer Controller and Scope/Printer (goes with lot 321)
- Twin Rack Of Varian Diode/Ion Pump Controllers and Power Supplies.
- Vanzetti Fiber Optic Thermal Monitor (no probe)
- Doric Model 410 A Temperature Readout Unit is Type-S

324. (2) Hon 4 Drawer File Cabinet, 26.5" Deep

325. Hon 4 Drawer File Cabinet, 26.5" Deep, Devon 4 Drawer File Cabinet, 28.5"

326. Phillips/Electro Scan Scanning Electron Microscope (SEM). This SEM has platinum orifices on its electron column that allows the system to operate at pressures in the ~20 Torr range, such that biologic samples can be imaged for a while before sample destruction. This System has LaB6 Filaments for Extra High Luminosity and also includes a High Temperature Hot Stage Furnace Accessory, for imaging samples at temperature of up to ~1,832° F. You can watch Pyrolysis processes while they occur using this Advanced Hot Stage Technology. The Column on this SEM has Two Varian 2" ASA Diffusion Pumps (as needed to maintain the emitter under high vacuum) while imaging at high sample pressures. This System also includes a small Ion Pump to protect the filament during high pressure Standby operations. The system also comes with the alignment tool used to set up the column after servicing the electron optics. The System will need roughing pumps to restore the system to service, but is a nice clean machine otherwise.

327. Double Door Metal Cabinet, 3 Adjustable Shelves, 78" High, 36" Wide, 18" Deep, Hon 4 Drawer File Cabinet

328. Double Door Metal Cabinet, 4 Shelves, 72" High, 36" Wide, 18" Deep This Cabinet has adjustable Height internal Shelves.

329. GCA/Vacuum Industries Vacuum Hot Press (Originally Built For Boeing Commercial Airplane Co.). System is a Series 3600 100 Ton Vacuum Hot Press, Model Number 5236 Built as GCA/VI Job Number 4-1965. This large system was originally designed to press and sinter Radomes for the SM-3 Program and was originally furnished with rough vacuum pumping only. Refrac Systems modified this system to run under high vacuum using a Varian VHS-6 Diffusion Pump Stack, Roughed by a Stokes Blower Stack Consisting of a Stokes Micro Vane Rotary Vane Pump Model 023-2 Topped with a Stokes Root Blower Model 306-401 (this Blower also includes the Vacuum Interlock Switch for Seamless Start Up). This System easily ran down to 10⁻⁶ Torr.

Refrac Systems converted the original vertical round 3 Phase Hot-Zone to a Rigid Graphite Foam Shield with Internal Dimensions of 34" W x 32" D x 31" Tall after removing the original ~ 24" ID Zone Furnished with the System. We ran long high temperature stranded Tungsten Heating Elements (Think Light Bulbs!!) Fed with a Tied Leg on the Rear Phase Walker Power Supply Rated at 120 KVA, so this system easily ran up to over 2,000 C.

System Hydraulics on this Press are Mostly Parker, starting with a 100 Ton Hydraulic Cylinder with a 10" Stroke. The System has 5" Cold Rams, and the Ram Train Includes a nice Caged 100 Ton Load Cell built by BHI Electronics. The Hydraulic Pump Cart was Built by Pasadena Hydraulics Inc. (PHI) and has Parker Pilot Valves, a Parker PACV Series 0-3000 PSIG Pump, and a Moog Model 370 Servo Valve for Precision Load Control. The System also has manual valving to operate with an included Enerpac Model P-80 Hand Pump, for low pressure operations.

Controls on this system include a Honeywell DCP-7700 ramp soak controller, a DPR-1500 Data Recorder and Stripchart, and a UDC 2000 series Over Temp Controller. There is also an Ircon Modline Optical Pyrometer set up for Running up to 1,500 C.

This system needs to be reworked to include a new Hot Zone, Step Down Transformer (probably to use something a bit more conventional like Moly Rod-Hairpin Elements) and be re-jacketed. This used system will still save somebody over 400K\$ on the cost of a brand new system, so do also understand that Centorr Vacuum Industries still has all the Drawings to Facilitate a full factory re-build on this durable Hot Press.

330. File Cabinet, 5 Drawer, 28.5" Deep, Matches Lot 330.A, 330.A File Cabinet, 5 Drawer, 28.5" Deep, Matches Lot 330

331. File Cabinet, 4 Drawer, 28.5" Deep, File Cabinet, 4 Drawer, 28.5" Deep

332. File Cabinet, 4 Drawer, 28.5" Deep

333. File Cabinet, 4 Drawer, 28.5" Deep, File Cabinet, 4 Drawer, 28.5" Deep

334. Hon File Cabinet, 4 Drawer, 26.5" Deep, Devon File Cabinet, 4 Drawer, 28.5" Deep

335. Hon File Cabinet, 4 Drawer, 26.5" Deep, Hon File Cabinet, 4 Drawer, 26.5" Deep

336. Steelcase File Cabinet, 4 Drawer, 28.5" Deep, Steelcase File Cabinet, 4 Drawer, 28.5" Deep

337. Campbell Hausfeld 1HP Air Compressor

338. Coleman/Briggs & Stratton Portable 5-HP Electrical Generator Makes 18.75 Amps 120VAC With a 100% Duty Cycle Producing 2,250 Watts!

339. Refrac Systems Custom Control System for Lot 340 Furnace. These controls include a Halmar 70 Amp SCR Running 208 VAC 1 Phase as the Input Line Voltage, a Doric Model DC 7100 Ramp Soak Controller, A Couple of Doric T/C Readouts (Type-K) a Chessell Series 300 Strip chart Recorder, and a Honeywell UDC 2000 O/T Limit Controller. The Controls included a Research Inc. Model 648A-5 Fuel Cell Type Oxygen Monitor, and the other Beckman Trace Moisture Analyzer Shown. This lot does not include the tooling shown in the Small Cardboard Box or on the Cart below the controller Stainless Steel Support Table, which is included in this sale lot.

340. Lindburgh Crucible Furnace. This Furnace has a Nice Inconel Retort that Measures 8.5" ID x 23.75" Deep That Sits down Inside this Model 56953 SiCGlowbar Heated Crucible Furnace That is Otherwise Rated for Service to 1,500 C. You can Easily Run this furnace without the retort up to 2,500 F for long Term Service in Air, Inert, or Reducing Gas Atmospheres. This System is an Excellent Glass Melting Furnace, and the lot also includes Three Extra Brand-New Immersion Type SiC Glowbar Spare Heating Elements.

341. Refrac Systems Custom Inert Gas Heat Treating Furnace. The Stainless-Steel Retort on This System is 13.5" ID x 15" Deep and is Heated Using Two Watlow Brand Cast-In Ceramic Fiber Heater Clamshells, rated to 2,200 F in Air. We used this furnace to run inert gas heat treating operations at around 2,000 F, so this System is Still in Very Good Condition. This Lot Includes an approx. 50Ft Long Extension Cord used to plug in the controller (lot 342 below) used with this system.

342. This is the Control System for Lot 341 Above. It has both a Manual and a Ramp Soak Controller, so This system is Easy to Put in Standby Hold at any Time During the Process. This Makes it particularly Useful when Annealing Very Delicate Parts. The Retort on the Above System is very well Sealed, and Includes a Number of Vertical Thermowells Coming Up Into the Retort from the Furnace Bottom for Profiling both Radial and Vertical Temp Gradients. These are easily monitored using the Two 5-Channel Doric Model 412A Type-K Temperature Readouts Included in this System. There is also a Beckman Trace Moisture Analyzer to Measure the Exit Dew Point on this retort. This controller conveniently plugs into a normal 50 Amp 208 VAC single Phase Range Outlet, and is on wheels for easy placement in your shop.

343. Refrac Systems Custom Friction Test System. This system was originally developed as a way to verify the dynamic breakaway coefficient of friction for solid lubricant materials, such as Moly disulfide and Tungsten Disulfide. It has an auto reversing motor drive, that is used to establish a stable solid lubricant "firch" film, while otherwise measuring the reaction force generated by a 50 Newton downward force working against a chrome plated "Clutch" surface. It contains a super precision needle bearing with very low hysteresis (<0.2 grams!!) and a load cell that resolves sub gram range loads generated by slippery materials with a COF in the 0 to 0.3 range. This may well be one of the best COF measuring systems ever built!! No Foreign Sales on This Item.

344. Sonoscan Scanning Laser Acoustic Microscope Model 2140 M This "SLAM" Microscope Uses a Raster Scanning Laser to measure defects in thin-walled MEMS parts, that may also have bonding

defects, which show up during resonance frequency scans. This system includes 7 different sizes of transducer head frequency generators, and full manuals. No Foreign Sales on This Item.

345. Centorr Vacuum Industries Series 3600 Model 4236-30T 30 Ton Vacuum Induction "Hot Ejection" Type Hot Press. This Hot Press has two Hydraulic Cylinders Making it Possible to Push The compacted Sample Out of the Hot Press Die and Shield Pack for rapid Process Cycle Times. It also is Much Easier to Load a Hot Injection Press as you can use the Bottom Press to lower the loaded Compaction Die into the Hot Zone. Arguably this Vacuum Hot Press is one of the Highest Temperature Furnace Ever Built, Capable of Operating at Temps > 3800 C. Using the Correct Hot Zone Materials and Set Up. We routinely ran this System for Extended Periods of Time (>40 Hours) at Temps over 2,200C/~4,000 F, and Typically Only Running ~15 KW RF Power.

The Vacuum System on this VHP Consists of an LN2 Trapped Varian VHS-6 Diffusion Pump Roughed by an Alacatel 2063 C 57CFM Direct Drive Rotary Vane Pump. It is Plumbed having an "All Stainless-Steel" Foreline with Norcal Control Valves. The Main Chamber is Isolated with a 6" ASA VRC Aluminum Right Angel Valve with an Integral KF-40 Roughing Port. No Holding Pump is Included.

This system Has Complex Controls with Many Options. The System Includes Two Types of Pyrometers (Mikron & Ircon Types) and has Thermocouple Pass throughs for Type-C (5W26 Type) Tungsten Rhenium and Type-S Control Thermocouples. It was normal for us to consume a W526 T/C as needed to get our last NIST Traceable Emissivity Correlation at ~2,300 C before switching over to running closed loop on the Pyrometer. There is a Lot of Engineering That Goes into Making and Precisely Controlling Such High Temperatures, and is Not Recommended for the Timid. The System has a Honeywell Model DCP-7700 Ramp Soak Controller with a Type-C Range Card (and this is rare!!) and a Model DRP-1500 Process recorder. This System includes Two Different Ircon Brand Two Colorimeters, and a Mikron One Color Pyrometer that can be used as a Check. There is No over Temp System That Works Reliably at over 2,000 C, but the RF Power Supply Does Have its Own Over Temp Protection System Included.

Vacuum Instrumentation Includes a Varian Model 843 Ion Gage and a Granville Phillips (GP) Model 307 Multi Gage Controller and a GP Model 275 Convector Tube Digital Readout for higher pressure (1-1000 Torr) process vacuum levels. As this System makes use of Graphite Felt Insulation Products and Other Specialty Ceramic Potting Compounds in the Hot Zone, This System Usually only pulls mid 10-5 Torr Vacuum Levels Following an Overnight "Warm" Pumping Interval.

This System Has a Pasadena Hydraulics Inc. Hydraulic Power Pack which uses Parker Pilot Control Valves, and a Model PACV Type 0-3000 Hydraulic Pump. Max Pressure is controlled using a Moog Model 760-102A Servo valve, which can be directed to move either ram in controlled fashion. As this is a Hot Ejection Vacuum Hot Press Both Rams have an Extended Travel Length of ~15 inches, which may also be moved using a Pendant Wand for Quick Furnace Loading.

For Heating this System Includes Inductotherm VIP Power Trak Induction Power Supply Model 35-96 (Exact Model Number is: 89-34320-246-1) and includes a Remote Water Chiller That Makes and Uses DI Water to Chill The Power Supply. This is considered a Low Voltage Low Frequency Power "Vacuum Induction Melting" Type RF Supply. The Unit can Deliver 35 KW of RF Power at around 9600 Hz (You can hear this so its little Purr Sound Lets You Know Its Running Correctly). The Output Frequency is Actually Allowed to Float a Bit to Optimize the Power Coupling between the RF Coil and the Load Being Heated. It is very efficient to heat things under high vacuum. The Power Supply Plugs into 460 VAC 3-Phase with a 52 amp feed, but rarely runs over 25KW even when running very hot.

This Power Supply is older and was acting finicky, so I recommend the Purchaser Send It Back to Inductotherm for All New hoses, and a Control System Check Up. It is likely there are some temperature switches that have gotten sticky, so let the factory sort this out for a few K\$ and get a like new System. We are including a spare Motherboard, and Capacitor (Non-PCB Type Throughout), an ISO Verter,

Several Control Relays, and even a couple of SCR Diodes, so this should keep this system running for at least another 20 years!!!

This System Comes with Three Different Working Coils and All Have been Run in The Past. The Type of Coil Used In a System Like This is Actually Configured as Two Opposed Coils (as Needed to Cancel Out the Magnetic Energy that Might Otherwise Get Dumped Into the Vacuum Chamber Wall) This means that the coils have a Cross Over Jumper Where the Coil Reverses its Winding Direction.

346. Hitachi AT-6000 Scanning Acoustic Tomograph X-Y Stage and Ultrasonics Transducer Head (200 MHz), KEVEX X-Ray EDS/EDAX Unit Has NIM BIN with All Electronics

347. Hitachi AT-6000 Scanning Acoustic Tomograph, Includes CPU, Keyboards, Monitors and Electronic Modules AT-100P Ultrasonic Pulser, AT-100R Ultrasonic Receiver, and AT-100D Ultrasonic Detector. These Systems are Typically Referred to as a U-Scan, or C-Scan System

348. Princeton Gamma Technology PGT System-4 SEM EDAX Control System for EDS Spectroscopy. Old Spare Parts Machine.

349. Large Hoffman Enclosure with 3 Phase Power Controls.

350. Lumonics Laser Company CO2 Laser Cutting and Part Marking Machine. Model is 1150 Watts Continuous and is an IMPACT 2150 SSM. Has a spare Ionization plane for the laser, and was removed working. Controls will need some re-work.

351. Centorr Vacuum Industries Series 3600 Model 3630-257 30 Ton Hot Ejection Vacuum Hot Press, Job Number 4-2212. We purchased this as a spare unit for our other Induction VHP being Sold as Lot 345/345.A above. The Unit Does not have its own RF Power Supply (and was being used with the Inductotherm unit sold in Lot 345A, which is a two Station Switchable Unit).

The idea was we could be loading this furnace while the other system was running, and then switch the power supply over to this press while the other was cooling. We even got to do this a few times, but it never found the right long term production contract to keep this happening. In any event this system is somewhat smaller and is much lower run time. The coil inside is like brand new and is sized at 9" ID x 10" Tall. It is perfect for sintering powdered metals and ceramics sized at 3" to 4" OD x 6" Tall Depending on the actual Material Being Pressed. This system has a like new VHS-6 Diff Pump Stack, Roughed by a Leybold D-30 Direct Drive Vacuum Pump. The system makes use of a Sargent Welch Duo Seal Model 1400 Belt Driven Pump acting as Standby Holding , and has an All Stainless-Steel KF-50 2" Foreline That Uses Fail Closed Norcal Products Stainless Steel Valves. The Main Gate Valve is a VRC 6" ASA Right Angle Aluminum Valve, and is the only Non-Stainless Steel Plumbing Component in the Vacuum System. This System is really Almost Like New, so if you Don't Buy Lot 345 above, simply Go Purchase a New Vacuum Induction Melting Power Supply and have an nearly Brand New 30 Ton Hot Ejection VHP System. As an Alternate We Reworked This Vacuum Chamber to Have 4 each High Current Power Ports such That This System May Also Be Converted to Run Using a Conventional Vacuum Furnace with two Sided Heating with The New Elements Spaced ~17.5" Apart (and deep). This would take a new hot zone, and power supply, but would make this Chamber quite Usable as a Diffusion Bonding Machine as well. No Foreign Sales on this Lot.

This is the Control System. This Press uses Two Later Model Honeywell DCP 700 Ramp Soak Controllers (One for Load Control, One Temp Control) and has an Ircon Mirage 500 C to 2400 C Two Color Optical Pyrometer. Vacuum Is Monitored by a Varian 843 Ion Gage Controller with Two Stations of Thermocouple Gages for Rough Vacuum Control.

As this is a somewhat Smaller Sized Press, This System Makes Use of Two Parker 2.5" Ram 30 Ton Hydraulic Cylinders with ~14" of Stroke. The Hydraulic Power is controlled by a PHD Power Pack that includes a 0-3000 PSIG Parker PAVC Style Hydraulic Pump, Parker Pilot Valves, and a Parker Servo-Valve running on a 4-20 ma Control Signal. There are several other Misc. Doric Temp Read Outs and Ircon Pyrometer Heads being sold with this Lot as Well. No Foreign Sales of This Lot.

352. (2) Misc. Small Hydraulic Lifting Table 17" x 28"

353. (2) Misc. Small Hydraulic Lifting Table 17" x 28"

354. Stainless Steel Trinity Roller Cart, 2 Shelves, 38" High, 24" Wide, 48" Deep

355. (2) Sandusky Brand Two Door Welded Storage Cabinet with Shelves, 72" High, 36" Wide, 18" Deep, Contains Misc. Ceramic and Graphite Fiber Insulation Products in Clean Plastic Tubs.

356. Stainless Steel Roller Cart, 3 Shelves, 31" High, 16" Wide, 24" Deep, Stainless Steel Roller Cart, 3 Shelves, 29" High, 16" Wide, 18" Deep

357. Sandusky Brand Double Door Welded Metal Cabinet, 72" High, 36" Wide, 18" Deep, 4 Shelves, Includes Misc. Graphite Tooling: Pedestal Supports, Die Bodies, Crucible Supports and Crucibles.

Large SiC Conversion Coated Graphite Retort Tube Sized at 12" ID x 33" OAL x 12.75" OD. This is Brand New and in the Factory Original Sealed Package surrounded by Foam.

358. Sandusky Brand Double Door Welded Metal Cabinet, 72" High, 36" Wide, 18" Deep, 4 Shelves, Includes Misc. Graphite Tooling Including Round Bar, Part Supports, and Heating Elements, Crystal Grower Crucibles.

Large Graphite Cylinder 22.375" OD x ~21" Long (1/4" Wall)

359. Double Door Metal Cabinet, 72" High, 36" Wide, 18" Deep, 4 Shelves, Including Plastic Tooling, Misc. Graphite Tooling: Heating Element, Susceptors, Flats and Half-Rounds, and Misc. Graphite Fasteners.

Graphite Single Phase Heating Element 4.5" ID x 7.5" Tall ~ 2 Gallon Size Pyrolytic Graphite Coated Graphite Crucible.

360. Double Door Metal Cabinet, 72" High, 36" Wide, 18" Deep, 4 Shelves, Includes Misc. Graphite Tubes and Cylinders Tooling.

Demineralizing Cartridges, Large Graphite Susceptors and Other Furnace Lining Related.

361. Double Door Metal Cabinet, 72" High, 36" Wide, 18" Deep, 4 Shelves, Includes Quartz Crucible Liners, Misc. Graphite Tooling Including Susceptors, Crucible Supports, Medium Crucibles, Large Crucibles, and Heating Element.

Misc. 30 lb. SiCMelting Crucible.

362. Double Door Metal Cabinet, 72" High, 36" Wide, 18" Deep, 4 Shelves, Includes Misc. Graphite Crucibles, Round Bottom, Small, Medium and Large.

A 1" x 24" wide Fiberflax Roll and 2 Graphite Susceptors.

363. Double Door Metal Cabinet, 72" High, 36" Wide, 18" Deep, 4 Shelves, Empty.

Graphite Die Bodies, 8" OD, 1" ID, 5" Tall, Three of These Plus 1 Graphite Susceptor

364. Double Door Metal Cabinet, 72" High, 36" Wide, 18" Deep, 4 Shelves, Includes Misc. Graphite Tooling: Mostly Rounds Ranging from about ¾" to 5" plus one 7 lb. SiC Crucible.
Graphite Die Bodies, 8" OD, 1" ID, 5" Tall, Quantity of 6, Used but Nice.
365. Double Door Metal Cabinet, 72" High, 36" Wide, 18" Deep, 4 Shelves, Includes Misc. Graphite Dies 3" and 4", Other Misc.
8" OD, 1" ID, 5" Tall Die, Plus Heating Element for Diamond Hot Press, Broken Die, and Special Die Assembly, 17"OD 15"ID, 15.5" Tall Low Density Graphite Insulation System, Nominally, 1" thick, Rigid, Felt Pack.
366. Rolling Vacuum Extractor Cart for Cleaning Cooling Towers. Allows a Person to Wet Vacuum Sediments From the Sump of a Cooling Tower for Disposal.
367. Stainless Steel Hood, 36" Wide, 30" Deep, 36" Tall with Plexiglas Top, on a Nice Stainless Steel Support Cart.
368. Polypropylene Hood, 47" Wide, 28.5" Deep, 28" Tall with Plexiglas Top with Large Kynar Sump Tank 23"x23"x18" Deep
369. Fume Hood/Spray Booth 40" Wide, 28" Deep, 29" Tall, Includes Regulator and Spray Gun, Mounted High Volume Extractor Fan and Ducting.
Dayton Brand 10 Gallon Wet/Dry Vacuum Cleaner.
370. (2) Misc. Rolling Cart
371. Gas Cylinder Moving Hand Truck and Hand Moving Dolly Pneu. Tires
372. Rolling Platform Truck 27" x 54" Red Paint Removable U- Handle and Rolling Platform Truck 24" x 48" Red Paint Removable U- Handle
373. (2) Rolling Plastic Cart Flat Top 24" x 36" With Lower Shelf.
374. Metal Roller Cart, Flat Top, 2 Lower Shelves, 19" x 36".
375. (2) Rolling Plastic Cart Flat Top, 24" x 36" With Lower Shelf.
376. (2) Rolling Plastic Cart, 24" x 36" With Lower Shelf.
377. (2) Rolling Plastic Cart, 24" x 36" With Lower Shelf.
378. Rolling Plastic Cart Flat Top, 24" x 36" With Lower Shelf and Compressed Gas Bottle Truck with Safety Wheel
379. CM Furnaces Rapid Temp Tube Furnace with Quartz Ground Glass Liner Tube Mounted on an Incline as This Tube Furnace was used to Oxidize Rhenium Metal to its Heptaoxide. System is mounded on a nice Stainless Steel Rolling Cart, and Includes a Superior Electric Variac Type Auto transformer 208

VAC 1 Phase (May accept 460 VAC) 50 Amps. Also includes a Doric 412A Type-K and several glassware items.

380. Refrac Systems Custom Inert Gas Bell Jar Furnace 6" ID x Nominally 8" Tall, System is Mounted in a Well-Insulated Enclosure, Includes 2 Watlow Clamshell Cast In Furnace, Measuring 8" ID and 12" Tall Overall, Leads Connected to External Circuit Breaker with Twist Lock Disconnecter, Power Source Not Included.

381. Integrated Air Systems Air Refrigerator, Model AC2-24-2-3, 208 Volts, 20 Amps, 1-Phase.

382. Centorr Vacuum Industries Vacuum Chamber Made using Standard Centorr Furnace Chamber Parts and a main Vessel 19" ID x 117" Straight Length With Like New "System 7" ? Furnace Design Front Door (21" OD Vacuum Flange), and a "Super-7" ? Furnace Design Front Door with 24" OD Vacuum Flange) This System could be cut down to make any Number of Useful Chambers. This Vessel is on a very nice rolling Cart with Extra Heavy Duty Casters Wheels (X6) and the Chamber has a pair of 6" ASA Flanges Mounted for Left Hand Side Pumping.

Loy Was Miss Tagged and should go with Lot 383 Below, and is the Control Console for a High Vacuum Hot Press (as Shown). Includes two Honeywell Model DCP-700's and a DPR-1500 Recorder. Console includes a lot of nice features, and is ready to put back into service.

383. GCA Vacuum Industries Large Vacuum Chamber. We modified this Chamber to add additional chamber cooling circuits, and a 2.5" RAM hot press Port (Upper and Lower). We built a nice Graphite Hot Zone Shield Pack for this Chamber as Shown, but did not install any Heating Element Yet. The buyer should anticipate needing a 250 to 275 KW heating power supply to run this system at around 1,700 °C. ~15 Ton Hydraulic 4 Post Press Frame that wraps around Chamber. Has 2.5" OD CRESS 316L Tie Bolts.

384. ATS Applied Test Systems Elevated Temperature Test Chamber, Series 3610 Furnace Oven 115 VAC, 7.8 Amps, Maximum Temp. 425° C, Convection Fan and Gas Solenoid Control.

385. KH Frederick Co. Physical Vapor Deposition Bell Jar 18"OD x 36" Tall, with 2 Evaporation Sources, Includes Sloan Digital Thickness Monitor Model 200. This system has a hydraulic actuator to pick up the bell jar, and uses a cryo trapped Varian VHS-6 diffusion pump with a Sargent Welch Duo-Seal Model 1374B primary roughing pump. This system plugs into 208 VAC 3-Phase, at ~ 5 kW input with adjustable current taps out to the evap. sources. System also includes a Varian model 843 ion gage control with 2 thermocouple readouts for controlling vacuum.

Control System for Frederick's Evaporator.

One Small Roller Kennedy Cabinet with Numerous PDV Evaporation Boats, Filaments, and Melting Source Pre-cursors. The Buyer of the Above will have a great assortment of many different types of Tungsten, Tantalum, and Molybdenum Physical Vapor Deposition Single Phase Evaporation Boat, and a Nice Used PVD reactor to run them in. We previously ran Gold and Chromium as our Main Deposition Metals.

386. CM Furnace Manufacturing Inert Gas Molybdenum-Disilicide Furnace Effective Size 9" x 9" x 9" Enclosed in a Totally Inerted Gas Control Retort Enclosure. System has a small rotary motion feed through with a retort fan for convection heating. Without the fan, this system is rated to 1700° C. This lot is CM Furnace's Job No. 920082 and is a Model No. 1716 as a Full Gas-Sealed Model.

387. CM Furnace Manufacturing Rapid Temp Furnace Model No.1710 with Controls and Power Supply.
388. Pasadena Hydraulics Inc. Hot Platinum Press with Stainless Steel Support Cart, Includes 2 Barber Colman Model 520 Solid State Platinum Power Controls with 2 Integral 8 x 8 Hot Platens. Systems is rated to 20 tons load maximum and comes with a lot of ceramic crucibles, and other misc. Tensilecut type steel rule cutting dies for all your testing needs.
389. Centorr Vacuum Industries System 7 Vacuum Chamber with Button Arc Melter and Copper Tilt Pour Melting Crucibles, Water-Cooled/Skull Type for Rapid Sample Melting. System includes a Varian M-6 6" ASA Diffusion Pump including Water-Cooled Trap. Isolation is achieved with a 6" manual VRC gage valve. This system does not include any roughing pump. There are several melting spare parts including a manual arc wand, and a quad-multi-pocket copper water-cooled crucible assembly. This lot is ready for anybody with a welding power supply that needs to manufacture small melts in a variety of possible metals. Perfect for you gold bugs or other jewelry making operations.
390. NSS Supersuction Pacer 30
391. Misc. Lot Pyrex Glass Funnels and small 14/20 flasks and adaptors to 24/40
Misc. Glassware Lot includes mostly 14/20 ground glass distillation receiver "cows" and short path vacuum distillation hardware, along with a few misc. flasks and adaptors.
Lot of mostly 100 ml 24/40 round bottom flasks
392. Lot of Misc. Lab Glassware: Mostly Graduated Cylinders, Misc Lab Glassware:14/20 boiling and condensers, And 24/40 round bottom 100 ml flasks
393. Large lot of Misc. heating Mantles one nice Kettle Reactor
394. Lot of Scrapped BA Ion gauges all with iridium filaments.
395. Lot of Nice Buchner and ground glass funnels along with vacuum sidearm Erlenmeyer Flasks perfect for all your vacuum filtration needs.
396. Misc. Lab Glass including glass ampules and plastic "evaporation loss stopping" floating polyethylene balls as shown. Misc. Flasks and Beakers as shown.
397. Aldrich vacuum still and other Misc. Glassware items, Misc. Ground glass joints and small Ceramic Buchner Funnels
398. Lot of Misc. Millipore Ground glass filters, other items
399. Lot of Misc. Lab Glass Items as shown.
400. Lot of Nine Each Separation Funnels.
401. Misc. Lot of Cold traps and other 14/20 Glassware
402. Lot of Misc. Lab Glassware as shown.

403. Misc. Lot of Glass Beakers as shown.
404. Misc. Lot of Glass Beakers, 30 total.
405. Misc. Lot of Large Flasks and Dome Cover
406. Lost of Misc. Multi Arm Ground glass Boiling Flasks Most are 29/42 size. 7 total Flasks.
407. Two ~1 Gallon Size Desiccant Jars, One Large Kontes Reaction Lid Round Bottom Flask (10 L??), 2 L Round Bottom Flask 24/40, Rectangular Battery Jar with Lid, One ~ 2 Gal Horizontal boiling Vessel (For TEOS vapor source??) Spherical Joints on Top and embedded quartz heater port. Misc. Quartz Covers and Baffles.
408. Lot of Misc. Lab Glassware as shown. And Lot of 1 Liter Volumetric Flasks. One Spherical Joint Cold Trap. Another bin with misc. vessels and quartz boats and baffles.
409. Ring Stand with 14/20 Moisture Determination Apparatus complete with Stopcock Take Off Flask, Thermometer, and heating mantle.
410. Ring Stand with small Hot Plate, heating mantle and short path 14/20 vacuum distillation apparatus, complete with bump trap and "4 udder" take off cow receiver.
411. Two Large 5000 ml Round Boiling Flasks with reducers to 24/40 Leibeg condensers. One has distillation column sidearm with both a 24/40 make up part as well as a 10/30 Thermometer port. Perfect for your next large volume vacuum distillation project.
412. Ring stand with 500 ml flat bottom 24/40 boiling flask, 5 row dimpled Vigreux distillation column, and nice Spiral type Friedrich Condenser
413. Rack Welded Integral Ring Stand with complete Vacuum Distillation Apparatus (Mostly 19/20) with vacuum addition and take off flasks. Includes nice Electromantle and Lab Jack for easy set up and operation.
414. Ring Stand with a 100 ml burette, and one Chromatography column including internal fritted plate and stopcock.
One Liter Reaction Kettle with 4 ported 24/40 Lid and Clamp. This Reactor also includes a ground glass stirring adaptor with Teflon coated Two Vane stirring Shaft.
415. Ring stand with a 14/40 Ground glass Moisture Determination Apparatus, complete with heating mantle and small support Stainless Steel Lab Jack
Ring Stand with small 14/20 Vacuum Distillation Apparatus, includes 50 ml boiling flask, bump trap, 14 row Vigreux distillation column, short Path Distillation head and four udder 2.5 ml milking cow rotatable flask take off, and heating mantle. Perfect for all your small batch micro analytical separation studies for liquids with close boiling points.
416. Ring stand with mounted rigid heating mantle around a 250 ml boiling flask, a No 1 Soxhlet Extraction apparatus, reflux addition arm, vacuum addition flask, and Friedrich Spiral Condenser. Perfect

for alkaloid extractions, such as making the perfect cup of coffee. Ring stand also includes a nice fritted chromatography column and 500 ml addition flask with Teflon stopcock for those wanting to test their product for purity.

417. Ring Stand with No. 2 Soxhlet extractor 24/40 Friedrich condenser sitting on a 2 liter round bottom boiling flask. Stand also contains another 4 arm one liter 24/40 round bottom boiling flask with various graham and Liebig condensers on top and also a rare vacuum jacketed "packable" distillation column about 18" long for many plates of possible separation.

418. Custom Made rack ring stand holding a complete 14/20 ground glass vacuum distillation apparatus as shown. This set up has everything except a heat source and vacuum pump. So take a closer look at this lot.

Ring Stand with super high purity solvent ultra-distillation fractionating still apparatus. Only used by purists like me...

419. Nice Kontes Version of a Millipore Ground glass vacuum filtration apparatus mounted on a nice heavy three legged ring stand.

25/40 Gas wetting flask with long Liebig condenser and vacuum distillation sidearm. Has a nifty vapor trap, so this is really just a lot of misc. as shown.

Nice stand with 4000 ml Kimax Brand heavy Wall Erlenmeyer Flask with side arm for vacuum filtration.

420. Two Ring Stands hold up a 24/40 vacuum distillation apparatus with a 1000 ml round bottom boiling flask, a vigreux column and Sidearm with longer insertion length 10/30 ground glass mercury thermometer (0-360 C Range), a short Liebig condenser and a simple 100 ml take off flask. Boiling side also has two different vacuum make up flasks with Teflon stopcocks.

421. Top end of Constant Temperature Reaction Kettle being sold as Lot 422 with a No 3 Soxhlet Extractor, and 24/40 Vapor Bump Trap and short path 24/40 Allihn Condenser. System also has a ~12" long 24/40 type Allihn Condenser and another 24/40 Bump Trap as shown.

422. Jacketed Constant Temperature Reaction Kettle's one about 3 liters, on about 500 ml.

423. Mettler Vacuum Glass Oven/Kugelrohr Vacuum Drying Oven Model D0301 with Tilting Stand and Secondary Buchi Sample Drying Flask with Stopcock and Ground Glass Tubing Adapter 0 - 300°C

424. Buchi Model T0-51 Glass Oven/Kugelrohr Vacuum Drying Oven with Extended Length Buchi Evaporation Flask and Glass Stopcock and Ground Glass Tubing Adapter 0 - 300°C, Unit Includes Glass coil Brand Thermal Heat Tape for Selective Temperature Trim on the Oven

425. Buchi Model B580 Glass Oven/Kugelrohr Vacuum Drying Oven with Movable Sample Positioner in Load Locked Vacuum Retort with Platinum Sample Boat. Glass Oven Operates at 0 - 300°C, and Includes Standard Bulbous Buchi Short-path Distillation Receiver as an Added Accessory.

426. Buchi Model T0-51 Glass Oven/Kugelrohr Vacuum Drying Oven with Extended Length Buchi Evaporation Flask and Glass Stopcock and Ground Glass Tubing Adapter 0 - 300°C

427. Lot of Misc. Glassware Mostly 24/40 Distillation Components

428. Lot of Misc. Glassware Mostly 24/40 Distillation Components
429. Lot of Misc. Glassware Mostly 24/40 Graduated Receiver Flask 0-30 ml and Smaller, 4 each 24/40 Thermometer Adapters
430. Lot of Misc. Glassware Auto Repettors
431. Lot of Misc. Glassware 24/40 Thermal Wells and Gas Sparges.
432. Lot of Misc. Glassware Including 14/20 Ultra-Short-Path Distillation Apparatus with Cow Receiver
433. Lot of Misc. Glassware Including:
- 2 each 24/40 vigreux columns with 11 plates
 - 24/40 Gram Condenser
 - 2 each 24/40 Allihn-type Condensers as shown
 - 24/40 Liebig Condenser
 - 24/40 Packable Distillation Column Low Resistance Frit
 - 24/40 Pintal-type Vigreux Column with 3 Pintal
 - 2 each 24/40 Vacuum Distillation Head with Side-Arm with Extended Length 10/30 Thermometer Port
 - Other Misc. Items Including Nichrome in Quartz Tube Tank Bottom Heater 8" W x 22" L x 8" D, as Shown.
434. Lot of Misc. Glassware
435. Lot of Misc. Glassware Consisting of Misc. Test Tubes and 6 each 25 ml Kimax Brand Erlenmeyer Flasks, Like New
436. Lot of Misc. Glassware Repipettors and Misc. Floats
437. Lot of Misc. Glassware 14/20 Round and Pear-Bottom Flasks, as Shown
438. Lot of Misc. Glassware Mostly Spherical Joint Glassware and Includes Vacustat McLeod Vacuum Gage, as Shown
439. Lot of Misc. Large Glassware Items Including Large Glass Carboy and 3 Vertical Rotovap Condenser Bodies
440. Lot of Glassware Graduated Cylinders, as Shown
441. Lot of Small Graduated Cylinders and 125 ml Erlenmeyer Flasks, as Shown
442. Lot of Misc. Glassware Including Small Lot of Graduated Cylinders, Lot of Beakers, Lot of Ported Stop-Cocks and 2 Nice Stainless Screen Cleaning Baskets

443. Lot of Misc. Darkroom Items Including Nikor Stainless Steel Film Processing Tank with 2 each 120 Size Film Holding Reels with Stainless Lid, Multiple Wratten-type Safelight Filters Including Series 6B, 00, 0C-Type and 1 Complete Larger Polycontrast Filter Kit for Enlarger Use, 1 Other Small Plastic 35 ml Film Processing Tank
444. Lot of Mic. Nalgene Lids, Drying Rack Posts, Other Dark Room Accessories
445. Lot Misc. Glassware as Shown Mix of 24/40 and 14/20 Glassware Items
446. Lot Misc. Glassware as Shown Mix of 24/40 Vacuum Distillation Accessories
447. Lot Misc. Glassware as Shown Mix of 24/40 Mostly Vacuum Distillation Glassware
448. Lot of Misc. Coulter Electronics Particle Size Tester, Sampling Unit Only Spare Parts Machine.
449. Lot of Misc. Condensers Including Allihn, Liebig, Gram-type Condensers Misc. Chromatography Items Including a Jacketed Column and Many 24/40 Ground Glass Fittings.
450. Lot of Misc. Mostly 24/40 Round-bottom Boiling Flasks and Flask Washing Tools.
451. Lot of Misc. Regular and Side-arm Erlenmeyer Flasks, as Shown.
452. Large Lot of Misc. 19/22 Ground Glass Items, Many Liebig Condensers and Vacuum Distillation Items, Lot of Large 1 liter and 2 liter Beakers, Misc. Chromatography Flasks and Flat-bottom Graduated Bottles with Nalgene Caps.
453. Misc. Lot Scintillation Vials and Other Small Bottles
454. Lot of Misc. Small Jars 4 and 8 oz.
455. Lot of Misc. of Several Hundred Small Sample/Pill Glass Bottles, Lot Includes approx. Dozen Coors Porcelain Evaporation Dishes and Other Misc. Test Tubes and Crucibles.
456. Large Lot of Misc. Vacuum Distillation Apparatus Extractors and Condensers, Also Includes a Jacketed Filtration Assembly. Unfortunately, the large Graham-type condenser shown in picture was damaged and removed from this lot.
457. 2 each, Ace Glassware Custom Fluidized Bed Reactor Columns with Frit Bottom Plates. Vessels could also be used for vacuum filtration.
458. 24/40 Corning Organic Ground Glass Chemistry Set Missing Some Parts.
459. 14/20 Custom Vacuum Distillation Apparatus Complete with Bump Trap as Shown.
460. Mostly Complete 14/20 Organic Chemistry Ground Glass Set. Purchase Lot 459 and 460 and have a really good 14/20 chemlab. This lot also includes a bag of many small, round bottom receiver flasks.

461. Virtis Ground Glass Reaction Kettle, approx. 400 ml, with 24/40 Ground Glass Top as Shown. Includes Other Reaction Items Shown.

461-1. Ring Stand with a mounted No 2. Soxhlet Extractor with a Graham Condenser and Two Arm 24/20 Flat Bottom 1 Liter Boiling Flask.

461-2. Misc. Kunglerohr Glass Oven Parts and Other Kimex and Buchi Glassware Items.

461-3. Soxhlet Extractor Apparatus with Graham Condenser and Other Glass Oven Misc. Parts

462. Mic. Lot of Kimble and Kontes Ground Glass fish tank bubblers. 100 mm Petri Dish Covers, Glass Lab Funnels, Teflon Scrapers, Nalgene Wide Mouth Reagent Bottles, Spherical glass joints, stoppers, liquid and electrical feed throughs, and other gas drying flask items as shown.

463. Lot of Ground Glass Reagent Bottles (No Stoppers with this lot), Erlenmeyer Flasks as shown

464. Lot of Erlenmeyer Flasks and Spray wash bottles

465. Lot of small Volumetric Flasks (mostly 25ml to 250 ml)

466. Lot of larger Volumetric Flasks (mostly 1 to 2 Liter) Does not include the dust cover bell jar shown. This Lot does include the large 6 Liter and all the smaller Erlenmeyer flasks shown.

467. Lot of Misc. Small 140 ml griffin tall form Beakers, small volumetric flasks and Erlenmeyer flasks

468. Millipore Ground Glass No 4 Filter holder with clamp Mounted on a Two Liter Erlenmeyer Flask with Side Arm Vacuum Connection Port mounted in a heavyduty ring stand. Needs a new No. 10 drilled cork. This lot also includes a nice 14/20 "short Path" vacuum distillation apparatus with "Cow" type triple flask take off port. Perfect for small sample fractional distillation work.

469. Buchi Model R Rotovap with long vapor duct and vertical condenser. Needs the condenser internal cold finger, a new vapor duct seal and condenser mounting nut with spring. System has a nice working hot water bath and includes a clean used 2000 ml boiling flask.

470. Buchi Model RE 120 Rotovap with Vertical condenser as shown. This rotovap system has a very nice secondary cold trap for recovering all your expensive solvents. Unit includes a nice working Buchi Model B-465 Hot water bath, and is all mounted on a nice stand ready to put into service (sans a couple of water and vacuum hoses and a good chemical vacuum pump).

471. Buchi Model R Rotovapor with nice vacuum solvent recovery cold trap. I was using this unit to extract nut flavors as their essential oils. Does not include water bath.

472. Lot of High Temperature Sublimation Flasks as shown. Lot also contains misc. watch glass covers, gas drying tubes, many other small misc. items as shown.

473. Lot of Misc. 24/40 vacuum distillation "Kit" glassware as shown.

474. Lot of mostly 24/40 multiple arms boiling flasks, one triple 24/40 "cow" type condenser distribution adaptor.
475. Large Misc. lot of Lab funnels and round bottom flasks with ground glass inlets. 4 each sized at 200 ml (14/20) and three each sized at 500 ml (24/40)
476. Lot of Misc. Barnstead MP-6 ?? glass still boiling vessels, and misc. side arm and "bump" traps. Not complete, but could be a godsend for somebody needing a new boiler flask (and this one includes a good working Vycor Heater too!!).
477. Lot of Misc. Lab Ground Glass Items, Including a 24/40 vacuum distillation side arm, and the largest Allihn type Reflux condenser in this auction with a male 71/60 glass joint drip end, as well as other items as shown.
478. Lot of Large Graduated Cylinders 3 x 1L, 1@2L Stainless cart and Misc. of Ground Glassware Adaptor Bushings Included.
479. Unitek Equipment Corp. Solid State Stored Energy Welding Power Supply Dual Pulse Model 125 Spot Weld Power Supply, Includes a Althanh Enterprises Inc. Adjustable Frame Weld Head. Catalogue 125DP, Includes the Switch and Remote Head Power Control.
Hughes Model HTT-550 Thermocouple-Controlled Power Supply.
480. This lot consists of 5 each Die Cast Aluminum Compressed Gas Cylinder Supports. Three of these units have built-in wheels 2x for easy moving of ~10" OD gas cylinders around your shop. Use these at your own risk as I have no idea if these are even OSHA compliant.
481. Air Products Displex Helium Cryo Compressor and Corning Brand PC-35-RC Remote Controlled Lab Hot Plate.
482. Nilfisk Air-Driven Stainless Steel HEPA Vacuum Cleaner with Backpack Model 9894, Standard Nilfisk Hose Adapter.
483. Weller Fumex Solder Smoke Eater Fume Extractor and Unitek C-Frame Spot Weld Head and Transformer.
484. ORC Corp. Clamshell Quartz Lamp Heater Assembly Includes All Quartz Lamps and Water Cooling Accessories. Lot Includes a Misc. Quartz Lamp Endplate Assembly, as Shown.
485. Mixing Tank, 50 Gallon Nagine Polyethylene Tank on Nice Roller Cart, as shown. Tank includes a Baldor 1/3 HP Electric Mixing Motor. This tank Cart has and Integrally Mounted 3/4 HP Stainless Steel TEEL Pump with a 1.25" inlet, 3/4" outlet. This Cart has Heavy Duty Rolling Caster Wheels.
486. Sage Technologies Conical Mixing Tank, ~50 Gallons with a Gast Air Driven Stirring Motor, and Tank Heater as shown. Lot also includes a Wilden 1/2" diaphragm pump. One of the controllers sold in Lot #501 is the electronic controller for use with this heated mixing tank.
487. Misc. Lot of CRESS 410 Sheet Metal Approximate Weight ~ 350 LBM. The Two Thick Rolls are 0.040" Thick x 6" Wide Coils, and the top coil is 0.005" Thick x 6" wide Sheet.

488. Sage Technologies Conical Mixing Tank, ~20 Gallons with a Gas Air Driven Gear Box Stirring Motor, as shown. Lot also includes a Wilden ½" diaphragm pump. The controllers sold in Lot #501 are the electronic controllers for use with this mixing tank.

489. Two Each Conical Mixing Tanks ~25 Gal each with its own Heavy-Duty Adjustable Stand and Mixer Mount. Each Mount has a Lightnin Brand Air Driven Mixer Motor Model 97/G05883-03. Lot includes an additional 8" X 16" X 8" Kynar plastic rinse tank.

490. Misc. Lot Including 2 Plastic Tanks and 1 Rotary Vain Drum Chemical Pump. The largest tank is a new Ace Rotomold 30 Gallon Polyethylene Tank with 10" Through Port and Cover on Top and Conical Frame Support Stand as Shown. Tank has 2" NPT female bottom threads. Smaller Tank is ~ 20 Gallons and has a quasi-conical bottom.

491. One each Vertical Conical Tank with 4" Butterfly Valve on its Bottom, Tank Measures 65" Tall and Includes a 1" Wilden Diaphragm Pump Model Description T2/PPPB/TF/TF/PTV/400. Straight Length of Tank 21" and 28" ID.

492. Misc. Lot Including 1 US Filter Corp. 8" Bag Filter, Vertical 8" x 20" Filter, 2" In and 2" Out, and 2 ~ 10 Gallon Millipore Pressurized Tanks ASME "UM" Stamped for Service at 140 PSIG at RT. Misc. other plumbing included as shown.

493. Biff/General Signal Metering Pump PROPSUPER B Metering Pump Model 1741-22-9824. 90 Gallons per hour with 150 PSIG Max Outlet Pressure, 1.5" inch in, 1.5" inch out. System is designed for viscous fluid use and includes the Winsmith speed reducer Model 5CB driven by a 3 HP GE 3 phase motor 460/280 VAC input as a 182T frame motor.

494. Wilden 0.5" Diaphragm Pump Close-Coupled to Small 4" Stainless Steel Bag Filter. This cart is ready to move where ever you need it, for whatever fluid you need.

495. Oneac Corp., Quantity 10, Model UP1103, Uninterruptable Power Supplies, Each Unit is a 1/10 Sine Wave Backup Power Supply for all Your Desktop Computing Systems. Most of these systems had new gel-cell lead-acid sealed batteries a few years ago and should be good to use. Lot includes one additional American Power Conversions Backups Model 800RT.

496. Clean Air Systems Corp. Vertical Dust Hood, 2-Sided, with Hinged Working Ports on a Nice Metal Roller Cart. Usable Work Area 30" x 18".

497. Misc. Lot of Tanks, Including, 2 Each Branson Model TDV-610 Vapor Degreasers, a Quantity of 2 Each Deionized Water Tanks 11" x 24" x 28" Deep Stainless-Steel Tanks, and 1 Nice Heavy Duty Polyethylene Drum Type 80 Gallon Open Top with Cover.

498. 4 Each 5 Gallon Pails of Superior Graphite SiC Lapping Grit Media Grade 490N. One 5 Gallon Pail of Advanced Ceramics Manufacturing Aquacore Type 1024.

499. Lot of Misc. Lot of Stainless Steel Vacuum Parts and Accessories, Including a 10" ASA Extended length 150# Weld Neck Flange TIG Welded onto a SCH 40 17.75" Long SCH 40 Welded Stainless Pipe, a 0.75" Thick x 20" OD Bell Jar Base with 10 Each Standard Vacuum Feed thru Holes, and Two Other Larger

Ports (one with an induction power supply feed). Lot includes a Stainless Steel Blanchard Ground Disc (Cover Plate) sized at ½" x 34" OD with an O-Ring Groove. Lot includes a Millipore Pressurized Tank ~25 Gallons ASME "UM-Stamped" for Service at 130 PSIG at RT, and a 6" ASA cross pumping between two, up to share vacuums Trap 2 Tee and LN. This common diffusion pump chambers pump between two diffusion bellows allows the user to share on vacuum chamber.

500. Lot of Misc. Cleaning Supplies, including a Nice Corning VC-12 Heated Glass Tank (with Manual), an Mountain Gate Engineering Corp., Steam Aging Cabinet (Originally Built for AT&T), a Stainless Steel Partitioned Tray (sized to hold 25 each approx. 1 Quarts Size (4" x 4" Size Pockets Sized for Bottles), One Stainless Steel Tank 12" x 20" x 10" deep with one 1" Drain Bosch on the low end. This Lot also includes 15 Each Justrite Brand Model Number "E" One Quart Safety Can which is an Underwriters Laboratories Listed Fire Safety Can for Bench top use of Solvents. Cans have Internal Flash Arresting Filter. This Lot also includes a 1 cubic Foot Box of Plascore Brand Clean room Grade Continuous Adhesive Backed Urethane Foam for Sealing Clean room Grid Ceiling Tiles and Air Filters.

501. Quantity 3 Custom Programmable Chemical Process Controllers Including Automation Direct Part No. EZ-S8C-F Monitors and Allen Bradley Micrologix Model 1200 Programmable Logic Controllers with 2 Four-Channel Analogue Input Modules each. Misc. Instrument Transformers, Relays, Circuit Breakers and 24 Volt Power Supply. These units have loud Sonalert alarm bells and Cutler Hammer status indicating light bars, so besides being good spare parts, these could be configured to control a range of other custom processes.

502. Barnstead E-Pure Water Purification and Di Water Production Source Model D4641. Uses four stations of purification cartridges that you will need to get new.

503. Misc. Tanks Including 1 Kynar Tank with Overflow 7" x 10" x 8" Deep, 1 Stainless Steel National Appliance Company Hot Water Bath Tank Model 230. Misc. 3" Drain Bosch and 1 Ultra Clean Products Corp. Model 3400-VA Shoe Cleaner.

504. Delta Sonics MG Series Ultrasonic Cleaner Power Supply Model MG600 Includes New Utility Sink with Legs and 1 Taylor Hobbson Talysurf 10 Profilometer Head, Parts Machine Only.

505. Lot of Misc. Components including a 5-liter Millipore ASME "UM Stamped" Pressurized Solvent Delivery Vessel Catalogue No. XX6700L05, and other cleaning tools and parts.

506. Audion Elektro 24" wide Plastic Bag Sealer, Mounted on Nice Stainless Steel Clean room Shelving Unit, Has Hands-free Foot Pedal Operation.

507. Envirco Corp. Model 10594 115 VAC 4.2 Amps, Updraft Smoke Removal Hood. Needs new inlet filter but otherwise is good to go.

508. Oversize Pallet Racking Unit ~20Ft Tall with 10 Extra Deep Shelves at 6 Ft Deep. Each Shelf has 2 each 54" Wide Screen Wire Covers with Extra Rib Stiffeners On each Cover for Extra Load Bearing Capability. Each Unit has 2 each 9 Ft Wide Brackets for each shelf and Measures 18' 4" wide overall length.

509. Same Racking as Item 508, but only includes 9 Shelving Levels.

510. Branson Heated Ultrasonic Tank. Tank internal Dimensions measure ~16" Wide x 16" Deep x 20" Height. System runs on 208 VAC single Phase and is a 25 KHZ unit.
511. Misc. Lot of Ground Glass Adaptors. Mostly 14/20 to 24/40 or 19/20. Many others sizes too.
512. Misc. AV Cart and Electronics
513. Nice Plastic Shelving Unit 4 Shelves, Each ~16" x 19" Standing 65.5" Tall
514. Hyster Model S30 A. Triple Mast w/Side Shift. Starts and Runs Great, but Hydraulic Cylinder & Pump needs an OH.
515. Liqua-Bin M These Flo-Bin Bulk Liquid Moving Containers were previously used to move ink for use in newspaper printing applications. At the end of the newspapers operation (Gannet Publications), these bins were properly cleaned out for the next application. These bulk material handling containers measure approx. 36" OD and have a straight length of 68" before coming to a clamp which allows the upper lid to be removed. These are heavy duty and nice. They will be perfect, for most any agricultural liquid handling need or wastewater evaporation tank need. I am not sure what the exact volume of these tanks is, but I would guess 260 Gallons?
516. Liqua-Bin R, Same Notes as Lot 515
517. Liqua-Bin Y Same Notes as Lot 515
518. Liqua-B B Same Notes as Lot 515
519. Liqua-Bin Y Same Notes as Lot 515