

RESOURCES

A summary of new products and services
for materials research...

Stereomicroscope with 12.5:1 Zoom:

Leica's MZ12 enables users to increase magnification of an object from 8x to 100x in a single zooming movement. A complete range of main objectives allows a maximum magnification of 640x. The optics carrier, objective, binocular tube, eyepieces, focusing drive, stand and illuminator are modular and can be combined. Accessories are available for recording, measuring, polarized light work, and dual station viewing. Automatic photomicrographic and video systems can be included.

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Powder Metallurgy Design Manual:

The Metal Powder Industries Federation's 146-page reference on powder metallurgy describes how to use the powder metallurgy process to design and specify for P/M parts. Sections include metal injection molding; P/M forging; design and development of P/M, MIM, and P/F components; properties of alloys and materials; powder characteristics; liquid phase sintering; manufacturing processes; and case histories.

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Helium Leak Detector:

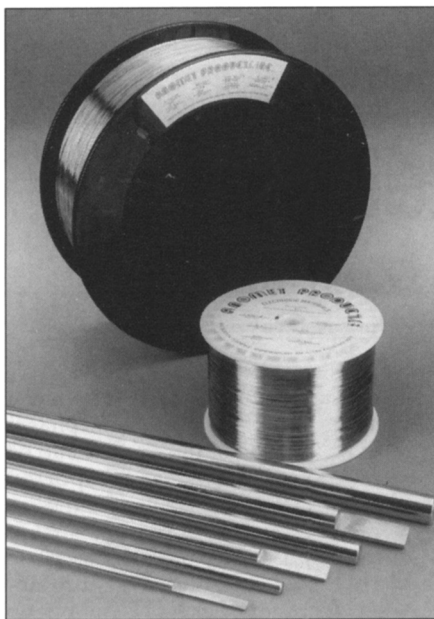
Varians Vacuum's 959 Power-Sniff combines the performance of the 959 MacroTorr® leak detector with a probe to provide helium sniffing for production situations. The system can detect helium leaks in the range of 10^{-6} atm cm^3/s using probe speeds as high as 1 ft/s. No dedicated sampling pumps or membranes are required, and the unit can operate in temperatures exceeding 120°F.

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Plastics Characterization System:

Custom Scientific Instruments' HDV3 enables users to determine deflection temperature under load and the VICAT softening point of plastic materials. The MS-DOS-based software allows generation of deflection temperature under load and VICAT performance curves for each test specimen, with up to six specimen testing stations available. A dynamic media circulation pattern controls the silicon oil bath temperature within $\pm 0.2^\circ\text{C}$ at 300°C . Temperature cycling is managed by a microprocessor-based ramp/soak controller permitting rise rates up to $2\pm 0.2^\circ\text{C}/\text{min}$. Data can be exported to spreadsheet programs.

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Nickel-Clad Copper Wire: Anomet's nickel-clad copper wire features a metallurgical bond with complete hermetic sealing between the metals rather than plating. Available with annealed through full hard tempers, the wire provides 45% IACS conductivity and can be supplied as wire and rod from 0.010-in. to 1-in. in diameter. The standard nickel ratio is 27%, with 10 to 40% Ni optional.

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In-Line Waterpumps: CTI-Cryogenics' On-Board® In-line Waterpumps mounted over a turbo pump can improve water vapor pumping speed up to 16,000 l/sec, for fast pumpdown times and low base pressures. Available with standard ISO and metal seal flanges from 100 to 250 mm, the Waterpumps mount between the vacuum chamber and the turbo pump. Custom configurations are available.

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On-Demand Cleaning Information:

Alconox has developed an automated fax-attendant information service called Alconofax. The system provides immediate direct-to-user information on laboratory cleaning products and detergents 24 hours a day. Material safety data sheets, technical bulletins, inhibitory residue test data, trace analyses, residue detection methods, and cleaning validation references are also provided by phone and fax.

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Portable Vacuum Transfer Standards:

The NGS Division of MKS Instruments offers portable vacuum calibrators that use Baratron® transfer standards. Designed for testing vacuum transmitters, vacuum transducers, and dial gauges, the standards feature NIST-traceable calibration certification and can ensure compliance with ISO 9000 procedures. The NGS PTS-2 provides *in situ* calibration for process instruments in the pressure range of 10^5 to 25,000 mm Hg. The portable carrying case contains an uninterruptible power supply to keep the system ready for use for up to one hour.

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Applied Pyrolysis Handbook:

CDS Analytical's 376-page book details methods for analyzing forensic evidence, as well as synthetic polymers, paints, fibers, natural substances, and other materials. The text contains 11 chapters on pyrolysis techniques. The book compares previously published results with new results obtained using the methods presented.

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Plasma Cleaner for TEM Specimens:

E.A. Fischione Instruments' Model 1400 system uses a low-energy high-frequency electrode-free plasma to remove amorphous damage from the specimen and contamination from both the specimen and holder. An oil-free vacuum system facilitates cleaning; the device cleans the specimen surface without heating and without changing the specimen's elemental composition or structural characteristics. The system also accepts side-entry specimen holders for all commercial TEMs.

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Materials Analysis Imaging Software:

Materials-Pro Analyzer™ from Media Cybernetics is a plug-in module for Image-Pro® Plus software for analysis of metals, ceramics, polymers, and advanced materials. The Windows-based package enables users to automate analysis of digitized images of specific materials. Using preprocessing routines and standard materials measurements, users can determine grain size, measure shape and orientation, gauge porosity and nodularity, and perform phase analysis. An image gallery database organizes and stores images.

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