

RESOURCES

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

Rotary Metrology Stage: Nikon's CNC rotary metrology stage allows users to measure parts on microscopes, profile projectors, and video measuring systems. The information then can be downloaded for output and analysis. The stage mounts to current Nikon measuring stages and interfaces with the Metronics Quadra-Chek® 4300 NL or open loop kit. Three chunks developed for use with the stage include a Jacobs self-centering precision drill chuck, a self-centering three-jaw scroll chuck, and a double-angle Collett chuck with Collett set.

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Directory and Databook for Thermoset Resins: Plastics Design Library's 339-page book lists commercially available thermoset resins for composites, for their use as adhesives, flowcoats, topcoats, gelcoats, in-mold coatings, casting laminating, polymer concrete, putties and filler pastes, pigment paste manufacture, SMC/BMC compounds, tooling, and ancillary purposes. The directory lists manufacturers and their affiliates, licenses, subsidiaries, agents, and distributors. The databook then outlines the properties of the materials each offers.

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Brittle Point Tester: The Benz BPT 2100 from Benz Materials Testing Instruments allows users to determine the crystallization point of rubber, plastics, and other compounds within 0.5°C. The unit tests the temperature at which the material becomes brittle, meeting ASTM and other standards to -75°C. Ten material samples can be run simultaneously. Liquid nitrogen maintains temperatures within 0.5°C in the cooling tank for extended periods of time, and an alarm timer helps avoid premature testing of samples that have not yet reached the cooling tank temperature.

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Thin Film Design Software: TFCalc from Software Spectra allows users to design and analyze optical thin film coatings. The software computes the reflectance, transmittance, absorptance, phase shift, electric field, and color of multilayer coating consisting of dielectric and metallic materials. The software also optimizes a coating design to meet performance targets, and results may be printed as graphs or tables, or stored in files for processing by other programs. Included are databases of optical constants which may be edited.

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▲ **Laser Diffraction Particle Analyzer:**

The SALD 201V particle size analyzer from Shimadzu Scientific Instruments has a measuring range of 0.4–200 µl. Wing-SALD software facilitates setup of test samples and enables real-time display of particle size distribution. Enhanced data processing capability includes superimposed comparison of up to 12 graphs to establish trends and confirm reliability.

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Membrane Air Dryer: The Balston® SMD from Whatman provides pure, dry compressed air and is a reliable alternative to refrigerant dryer technology. Unlike other membrane technology requiring 20–30% sweep flow for regeneration, the SMD requires an 8% sweep flow for regeneration. The unit dries compressed air to dewpoints of 35°F (~1.65°C) at flow rates up to 600 SCFM. The SMD has no moving parts, can be mounted in an existing pipeline, and needs no electrical connections.

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Light Guides: GVL-18-8 fiber from Chiu Technical contains 8 mm of glass and features 18-in. (~45.7-cm) bifurcated bundles attached to a common end block. The GI-20-6 contains 6 mm of glass and has an overall length of 20 in. (~50.8 cm), in a single bundle. Custom lengths are available. Both fibers are designed for an operating temperature range of 40°F to +600°F (~4°C to ~315°C) and are available in silicone and flexi-metal.

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GC Columns to Identify MTBE: J&W Scientific's gas chromatography capillary column, DB™-MTBE, is designed to enable chemists to successfully resolve methyl-tert-butyl-ether from the common pollutants 2- and 3-methylpentane that often cause identification errors and false positive results. The column is effective for EPA Method 8020 utilizing a photoionization detector. It is available in a 30-m length, with two inner diameters of 0.45 and 0.53 mm.

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Nickel Sputtering Target: Tosoh's nickel-alloy target allows device manufacturers to use nickel as an alternative to titanium-silicide and cobalt-silicide in semiconductor device contacts. Nickel has a wide process window and forms a low-resistivity silicide that is stable at elevated temperatures, making it suitable for use with low-*k* dielectrics. The Tosoh nickel target contains a small amount of silicon dopant to reduce undesirable ferromagnetic properties of nickel. Targets can be made in thicknesses of 0.25–0.5 in. (~0.64–1.27 cm).

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Database of ISO 9000-Registered Companies: A database of ISO 9000 and QS-9000 registered companies is available free on the *Quality Digest* website at www.qualitydigest.com. The database is updated twice per month and contains more than 26,000 registered businesses in North America. Information on more than 50 registrars is provided, with contact addresses and an overview of the registrar's scope, location, specialization, and certifications. Users can search on any combination of SIC, company name, registrar, name, state/province, or keyword within the registrar's scope.

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Fatigue Testing System: The Dyna-Might™ from Instron is designed for evaluating the durability of biomedical materials, components, and devices at forces less than 200 lb. The single-column tester simulates the forces and deflections that occur within human anatomy, including motions such as pushing a button or turning a dial. The system can conduct linear tests with total displacement of 2 in. (~5 cm). It has a cycling capability of ±1 in. (~± 2.54 cm) and can achieve frequencies up to 20 Hz. Website www.instron.com.

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Laser Level and Sensor: Nikon's NL-300E Electronic Level provides accuracy of ±8 s, a compensator range of ±10 min, and an operating diameter of 1706 ft. The egg-shaped chassis features a wire hung air dampened compensator system similar to those used in high-end automatic levels. The NL-300E provides complete 360° coverage with a glass protected rotor. An optional waterproof LS-6 Sensor can be submerged in water for 5 min and offers three resolution ranges: fine, medium, and coarse.

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