LABORATORY TESTING INC.

November 2010, Volume XXVI

LAB NEWS

Sophisticated Analysis to Meet Your Requirements

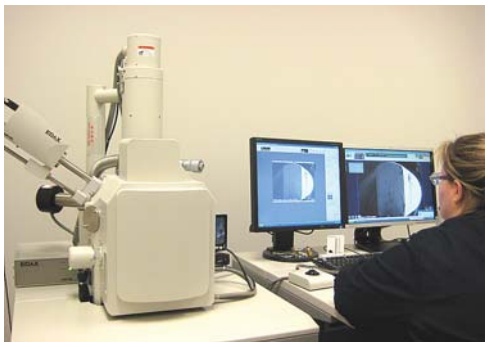
Scanning Electron Microscopy (SEM) and Energy Dispersive X-ray Spectrometry (EDS) are now performed at Laboratory Testing Inc. Our new Hitachi S-3400N SEM and EDAX EDS provide enhanced magnification, image resolution and analysis capabilities so we can meet your needs for more precise and detailed information about test samples.

The SEM/EDS system provides more sophisticated capabilities for microanalysis, material characterization, element analysis and failure analysis. Results of the analysis will help us answer your questions concerning:

- Cause of failure
- Surface features and defects
- Chemical composition (Qualitative & Semi-quantitative analysis)
- Material structure and properties

The SEM uses an electron beam for image clarity and detailed analysis, and is able to produce high resolution images with magnification from 5x to 300,000x. The large sample chamber allows us to examine samples up to 200 mm (7.87 in.) in diameter and 80 mm (3.14 in.) in height.

The SEM and EDS equipment is most effective in studying the surface of solid objects and is particularly helpful in microanalysis and analyzing small areas of interest on samples.

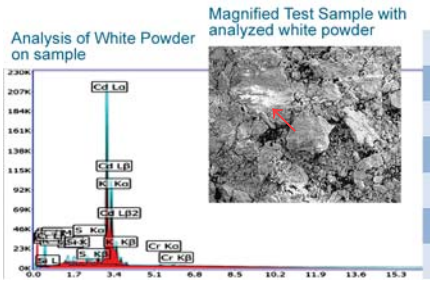


SEM/EDS system has extensive magnification and analysis features

The EDS system is powered by the new TEAM software package that facilitates material characterization via methods such as spectral analysis, line scans, and element mapping.

With our SEM and EDS services, you'll receive reliable results, timely turnaround and detailed certified reports.

For information on your specific requirements, please contact Sales/ Customer Service at sales@labtesting.com or 800-219-9095.



Element	Weight %	Atomic %	Net Int.	Net Int. Error
O K	25.19	68.01	848.73	0
Al K	1.12	1.79	296.06	0.01
Si K	0.51	0.79	184.26	0.01
S K	0.55	0.74	249.03	0.01
Cd L	71.49	27.47	12305.36	0
K K	0.94	1.04	475.35	0.01
Cr K	0.2	0.17	62.22	0.04

EDS identification of observed elements in analyzed sample and related quantitative information

In This Issue

Going Green at the Office

Laboratory Testing Inc. wants to do our part for a clean, green environment. That means giving our customers more green options, including paperless -

- Invoices and Statements
- Certifications
- Quotes
- Literature

Invoices and Statements

You can be sure that Invoices and Statements are delivered without delay to the right person. Just e-mail your company name, along with the recipient's name, title, e-mail address and phone number to accounting@labtesting.com.

Certifications

If you don't require hard copies of Certified Test Reports or Certificates of Calibration, we can send them electronically or give you online access to your certifications anytime, anyplace. You can view, download and print copies through *lti live update* (see below) or call us for an original, when needed.

All you need is e-mail and Adobe Acrobat Reader to receive electronic certifications. Internet access and a secure password will give you online access to your certifications, as well as the status of orders. Contact Sales/Customer Service at sales@labtesting.com or 800-219-9095 to sign up for e-mail certifications, *lti live update* or both.

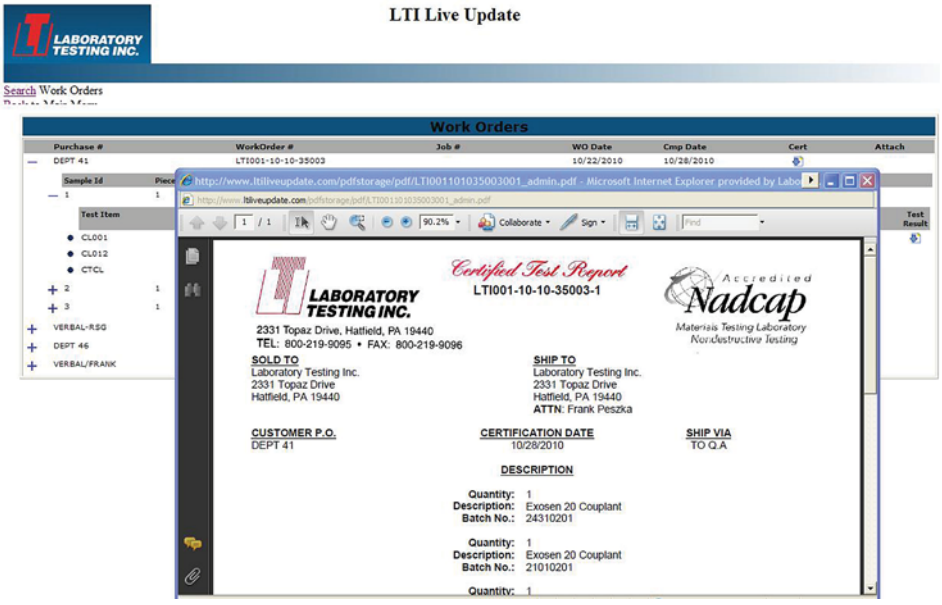
Quotes

Our Sales/Customer Service staff can also e-mail your Quotes. Simply send your RFQ by e-mail or ask for an e-mail quote when you call in or fax the request. You'll soon see our new, easy-to-read format.

Literature

Our company Brochure, List of Services, List of Items Calibrated and Sample Size Requirements are available by e-mail from Sales/Customer Service and on our website under Resources.

All of your choices are green-friendly and convenient too. Contact LTI today to join us in moving toward a greener future.



Calibration Services

LTI can calibrate many measuring instruments at your facility or ours.

Gage block calibration

Field calibration of optical comparator

Safe Shipping Guidelines

Items for calibration should be carefully packaged to prevent damage.

- Wrap instruments with sharp edges to avoid puncturing shipping containers.
- Wrap instrument storage cases in supplementary packaging.
- Package items in sturdy shipping containers made of heavy cardboard, wood or metal.
- Use sufficient padding around items in the shipping container to prevent shifting of contents.

Calibration to Ensure Measurement Accuracy

In past issues of LabNews, we covered our destructive and nondestructive testing services and test specimen machining. Starting with this issue, we will move on to metrology services and begin with a discussion of calibration.

Calibration is the process of determining the performance limitations of a measuring tool or instrument by comparing its measurement readings with a known value from a reference instrument or a standard. Standards are prepared by various organizations, agencies and governing bodies and are universally used by testing laboratories. A "traceable" calibration means that the reference instrument's known value can be traced back to a national standard, held by an organization such as NIST (National Institute of Standards and Technology). Routine calibration helps ensure that a measuring instrument will produce results which meet or exceed defined criteria with a specified degree of confidence.

Calibration looks at the measurement concepts of accuracy and precision. Accuracy is how close a measurement reading or result is to the known value or correct measurement. Precision is the consistency or repeatability of the measurement readings. Manufacturers generally state expected accuracy and precision of their instruments as a designated percentage or value.

Why Calibrate

Calibration ensures that readings taken from measuring instruments are consistent and accurate, and within the specification limits or tolerance. The main reason for calibration is that all instruments lose their ability to provide accurate measurements over time and with use. A calibration procedure may reveal an underlying problem that could be costly, if left unattended.

- In manufacturing, items could incorrectly pass or fail inspection resulting in inferior products going to market or costly rework or discard of good items.
- In product development, inaccurate measurements can distort findings and slow or stall progress.
- For companies in industries or with customers that require a regular calibration regimen for instruments used in production of their products or parts, the penalty for non-compliance could be fines or loss of business.

In general, commerce depends on globally agreed upon standards of weights and measures. Only traceable calibration can ensure adherence to these standards.

When to Calibrate

Calibrating your instruments prior to use is often a good policy. That way you'll have a measurement history from the beginning. When determining the calibration frequency, take into consideration factors that can effect accuracy, such as how often the instrument is used, the environmental conditions where the instrument is stored and used, and the required uncertainty in measurement. Shorter intervals between calibrations may reduce the risk of questionable measurements.

Types of Calibration

Calibration services are performed on a wide-range of measuring instruments and are typically named for the type of measurement the instrument performs, such as dimensional, mechanical, pressure, force, torque, electrical, temperature, mass, vacuum, humidity and flow calibration. Most measuring standards, gages and hand tools including micrometers, parallels and calipers, require dimensional or mechanical calibration.

Calibration at LTI

All calibration is performed by our department known as LTI Metrology, including a wide-range of A2LA and NIST-traceable calibration services both at our lab and in the field. We provide dimensional/mechanical, pressure, torque, force, electrical, temperature, mass and vacuum calibration services. Humidity and flow calibration orders are subcontracted to our approved vendors.

Field service is available for surface plates, optical comparators, hardness testers, balances, measuring tools and more. LTI also supplies new instruments and replacement parts from leading manufacturers, and provides repair services.

For pricing or to schedule calibration, contact Sales/Customer Service at sales@labtesting.com or 800-219-9095.

LAB NEWS

LABORATORY TESTING INC.
2331 Topaz Drive, Hatfield, PA 19440

New Equipment, Twice the Capacity

Elevated temperature tensile testing is a routine service provided at LTI. The tests are run using an elevated temperature furnace carousel connected to a new 120K Tinius Olsen tensile machine. The furnace heats the samples to a specified temperature, up to 1800°F maximum, before testing and can process three samples at once. Testing between 900°F and 1200°F is Nadcap accredited. This 120K machine is also used to perform room-temperature testing.

Tensile tests provide information about the properties of metals and are performed by applying an increasing load to a sample until the point of failure. The 120K machine is a replacement for an older 60K and provides our mechanical testing lab with greater capacity for processing orders with higher load requirements. The lab also performs bend, elongation, proof load, yield and many other mechanical tests.

Elevated temperature furnace carousel behind new 120K tensile testing machine

Contact LTI

LABORATORY TESTING INC.

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Web: www.labtesting.com

Holiday Closings

LTI will be closed for the holidays as follows:

Thanksgiving - Thurs., Nov. 25
Fri., Nov. 26
Christmas Eve - Fri., Dec. 24
New Year's Eve - Fri., Dec. 31

Enjoy the Holidays!