Toys and Consumer Goods | RoHS

Thermo Scientific Niton XRF Analyzers

Screening consumer products and electronics for lead and other toxic metals with speed, accuracy, and convenience

Thermo Scientific Niton XRF Analyzers

Elemental analysis for regulatory compliance made fast, easy – and mobile

For manufacturers and retailers alike, the demand to meet stringent regulations on permissible levels of lead, cadmium, and other toxins is a formidable challenge. And the list of affected products seems to grow every month – from toys, jewelry, and clothing to furniture, packaging, drinking glasses, and more.

Thermo Scientific Niton XRF analyzers are a key component of a reasonable testing program, which demonstrates "due diligence" and satisfies General Conformity Certification (GCC) requirements. They help you achieve compliance easily, cost effectively, and with complete confidence. Perform accurate elemental analysis in seconds anywhere on site, avoiding the significant cost and time delay of sending samples to outside laboratories. More than 25,000 Thermo Scientific Niton analyzers are in use today worldwide, with models engineered to help companies ensure they're building and selling the safest products possible.

Point-and-shoot simplicity

Thermo Scientific Niton XRF handheld analyzers have set a new standard for hazardous materials testing, from retail to RoHS. Ruggedized and weighing less than three pounds, they perform accurate, nondestructive testing with no sample preparation. Our handheld analyzers are ideal for incoming parts inspection, as well as for finished goods and store product safety audits.

Used by the U.S. Consumer Product Safety Commission (CPSC) and Europe's PROSAFE

Our handheld units also operate in your choice of optional test stands, offering a convenient test platform when needed.

▲ Bring your lab to the sample

The Thermo Scientific Niton FXL field x-ray lab delivers lab-quality performance in a compact unit you can take anywhere. Get the fastest results with the lowest levels of toxic metals detection in a unit light enough to set up at the loading dock, for incoming inspection, at the line, or in the lab... and it's easily portable for performing vendor audits. Experience superior elemental analysis in minutes rather than days with easy touch-screen operation. What's more, little training is required.

The Niton® FXL field x-ray lab has an internal battery and is designed to operate reliably in virtually any manufacturing environment. Plus, its closed-beam design requires minimal licensing in most countries. This instrument is the perfect complement to our handheld analyzers, providing a total sample testing solution.

Fast. Accurate. Easy to use.

Thermo Scientific Niton XRF analyzers deliver fast performance and low levels of detection for more than 25 elements, including light elements (Mg-S).

HANDHELD

Exceptionally fast, easy to use
Just point and shoot, or simply close the lid (Niton FXL). See results in seconds on a touch-screen color display.

Fit, form, function
Ruggedized with sealed construction, our analyzers are built with tough LEXAN® plastic, and are dust- and waterproof for worry-free use virtually anywhere. One-step system check requires no external accessories while advanced batteries support extended continuous operation on a single charge. All units operate virtually anywhere on site with a touch of the bright, color LCD screen. No PC is required, alleviating the worry of computer crash and loss of data.

Nondestructive with minimal sample preparation
Unlike destructive testing methods, samples remain intact and undamaged. All Thermo Scientific Niton handheld analyzers easily accommodate a wide variation of samples, with little or no pre-test preparation required.

GOLDD technology
Thermo Scientific geometrically optimized large area drift detector (GOLDD™) technology provides rapid measurement times and exceptional detection limits for toxic metals.

Niton XL2
HANDHELD
VALUE LEADER

Niton XL3t
HANDHELD
FEATURE LEADER

Which XRF analyzer is right for you?

HANDHELD THERMO SCIENTIFIC NITON ANALYZERS

- Maximum mobility
- Fastest results
- Point-and-shoot simplicity
- Ideal for manufacturing finished goods and retail/store inventories and audits

Niton XL2 Series	Niton XL3t Series
Ideal for testing restricted substances in consumer products	CCD camera and small-spot features improve test positioning on complex samples (optional)
Thermo Scientific TestAll technology simplifies the measurement process on all of our XRF analyzers	Screens for all 8 restricted substances in children's products (ASTM F963-08)
Standard 25 element analysis range (lead, mercury, cadmium, etc.)	Reliably screens for halogens in < 30 seconds
Ergonomic design with easy-touch large icon interface	More compact design with tilting, color, touch-screen display
Available with GOLDD technology for improved speed and limits of detection	Available with GOLDD technology and higher x-ray tube power for improved element range, speed, and limits of detection

FIELD X-RAY LAB

Take advantage of additional laboratory features including a sample spinner to give an average over a larger sample area, 1 mm and 3 mm spot sizes, and included CCD camera for the Niton FXL.

Niton XL3t GOLDD+
SUPERIOR HANDHELD
PERFORMANCE AND FEATURES

Niton FXL
UNSURPASSED
PERFORMANCE
AND FEATURES

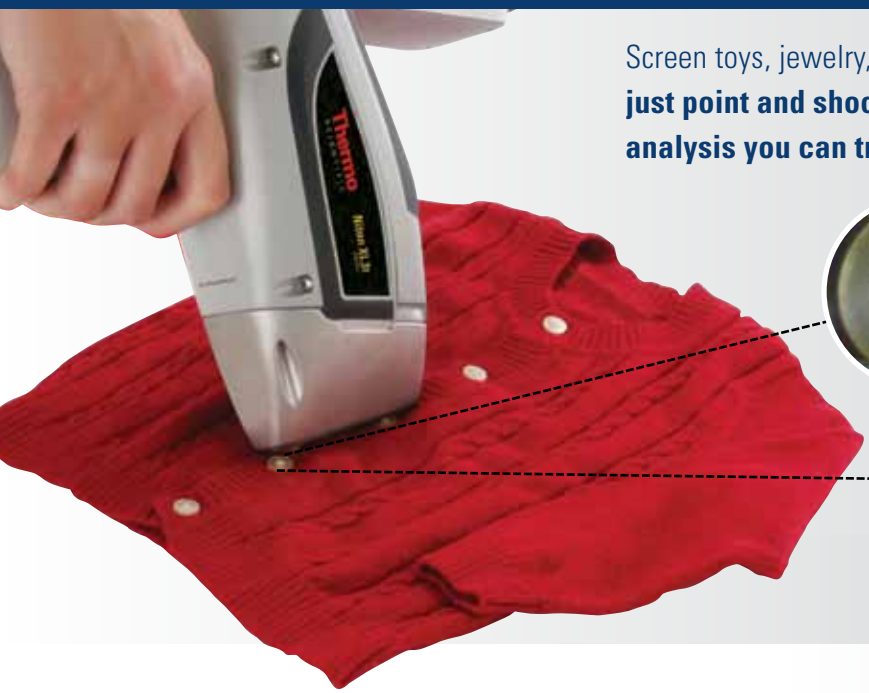
Niton FXL Series	GOLDD Technology
Superior performance and features, beyond that of handheld XRF	High-speed detector that delivers up to 10X performance improvement
Motorized X-Y positioning for targeting features down to 1 mm in size	Overall system geometry is improved, including a very large-area detector
Bridges the gap between handhelds and lengthy, destructive lab-based analysis	Each model is paired with an advanced x-ray tube that optimizes overall system sensitivity
Transportable, battery-operated analyzer with large display and enclosed sample chamber	Extended element range, including light element analysis (Mg-S) without helium or vacuum
Available with GOLDD technology and the highest tube power for the very best in element range, speed, spot size, and limits of detection	Best choice for detecting Pb in thin paint layers, packaging directive compliance, and halogen-free manufacturing

NITON FXL FIELD X-RAY LAB

- Highest performance and lowest levels of detection
- More traditional lab features
- Smallest spot sampling
- Closed-beam design for minimal licensing requirements in most countries
- X-Y positioning head to easily find specific analysis area

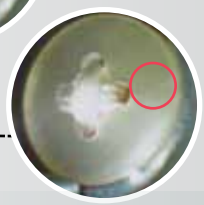
Choose the same analyzer the regulators use

Plastic | Metal | Solder | Paint | Ceramic



Screen toys, jewelry, clothing, furniture, and more –
just point and shoot for nearly instantaneous elemental analysis you can trust.

Our analyzers help you align just the button



With the 3 mm small spot, isolate the plastic from the thread

We Make Testing Simple with **TestAll technology**

All of our XRF analyzers come with the unique TestAll™ feature, which allows non-technical users to automatically differentiate the presence of lead on the surface or in the substrate of the tested object.

- **Operate with limited training required**
- **Automatically determine appropriate testing parameters**
- **Test virtually any sample with confidence**

Integrated Camera with Small-Spot Feature – **Leave No Spot Untested**

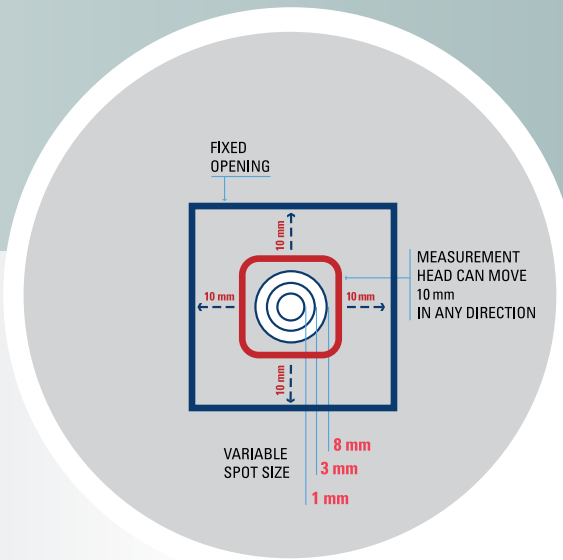
The composition of tested materials can vary widely, with toxic elements hiding in the smallest recesses. The camera and small-spot features available on our Niton XL3t Series and Niton FXL Series analyzers let you precisely locate, capture, and store sample data from components and tiny sample areas as small as 1 mm (Niton FXL).

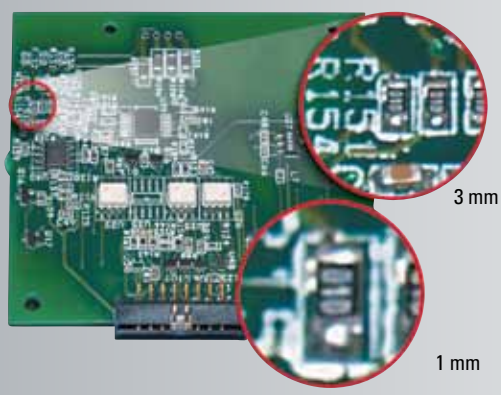
- **Improve accuracy by better positioning very small samples**
- **Know exactly what you're testing**
- **Capture a visual record of your results**

Features designed with you in mind

Positioned for Success

Our unmatched X-Y positioning feature lets you easily home in on a 1 mm spot. After placing your sample in the test chamber, you can position the XRF head quickly to the precise spot you want to test.





Isolate areas as small as 1 mm with the Niton FXL field x-ray lab or 3 mm with the Niton XL3t and Niton XL3t GOLDD+ Series handheld analyzers – valuable for testing leads and terminations on printed circuit boards

Every Thermo Scientific Niton XRF analyzer is engineered to help meet your compliance needs

Legend: +++ Superior; ++ Excellent; + Good; – Not applicable/not available

Regulatory Directives/Initiatives	Typical Sample Types	Niton XL2	Niton XL2 GOLDD	Niton XL3t GOLDD +	Niton FXL
CPSIA (for analysis of restricted elements only)	Large objects (e.g., finished toy doll)	++	+++	+++	–
	Small objects/components (e.g., miniature toy car wheel)	–	–	+++	+++
	Very small objects/components (< 10 mm in size)	–	–	++	+++
Prop 65 (for analysis of restricted elements only)	Large objects (e.g., finished toy doll)	++	+++	+++	–
	Small objects (e.g., miniature toy car wheel)	–	–	+++	+++
	Very small objects (< 10 mm in size)	–	–	++	+++
EN 71-3 (for analysis of restricted elements only) ASTM F963	Large objects (e.g., finished toy doll)	++	+++	+++	–
	Small objects (e.g., miniature car wheel)	–	–	+++	+++
	Very small objects (< 10 mm in size)	–	–	++	+++
ASTM F2617-08	Large plastic only objects	++	+++	+++	–
	Small plastic only objects	–	–	+++	+++
	Very small plastic only objects	–	–	++	+++
Cadmium (Cd) in jewelry	Larger finished fashion and costume pieces (e.g., necklace pendant)	–	–	++	+++
	Smaller finished pieces (e.g., ring)	–	–	++	+++
	Very small pieces/components (e.g., post of an earring)	–	–	+	+++
RoHS/halogen-free/WEEE	Larger PCBs (> 6" x 6")	–	–	+++	–
	Smaller PCBs (> 6" x 6")	–	–	++	+++
	Electronic components (e.g., leg of a capacitor)	–	–	++	+++
TPCH/European packaging directive	Larger containers (e.g., glass soda bottle)	+	++	+++	–
	Smaller containers (e.g., candy bar wrapper)	–	–	++	+++
	Very small objects (e.g., plastic chip from milk container)	–	–	++	+++

Delivering cost-effective compliance:

European Union (EU) Restriction of Hazardous Substances (RoHS) Directive (2002/95/EC)

The need for our XRF analyzers has never been greater, as new initiatives regarding toxic substances are implemented around the world. "Green" manufacturing also means "halogen-free."

Following RoHS, industry initiatives are now in place to produce halogen-free flame retardant products, ranging from consumer electronics to furniture.

IEC 61249-2-21, defines halogen-free as:

- 900 ppm maximum Cl
- 900 ppm maximum Br
- 1,500 ppm maximum total halogens

With detection limits well below industry-defined thresholds, our XRF analyzers deliver reliable results for halogens in seconds, reducing your costs and eliminating production delays.

Meeting the needs of CPSIA compliance

Test with confidence, from incoming parts to finished product

The U.S. Consumer Product Safety Commission (CPSC), Europe's PROSAFE, the U.S. Dept. of Homeland Security (DHS) Customs & Border Protection, and others have chosen and trust Thermo Scientific Niton analyzers.

"We deal with components no larger than a grain of sand and we use the small spot every time.

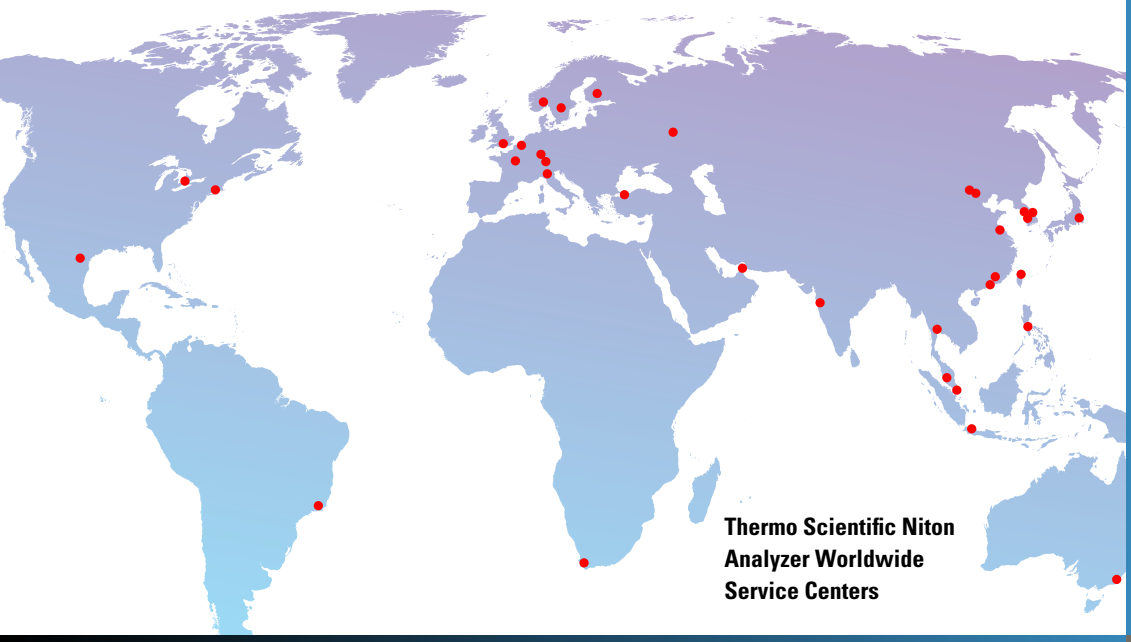
"With the camera, it's complementary support to have the actual analysis photograph on the certificate accompanying the component… we can provide both a standard Certificate of Conformance in addition to copies of the actual alloy composition breakdown…"

Philip P. Thurman, quality assurance director, QMS

"A manufacturer of boys' dress shirts needed to test 360,000 garments for the possible presence of lead. Using three [Thermo Scientific] Niton XRF analyzers, it performed 7,000 readings per day, six days per week, for three months.

"Using the unit's optional CCD camera, the company saved about 442 hours alone just by rapidly locating the specific garment test area prior to each reading."

Seth Hanson, Hanson Associates, presenting at the American Apparel & Footwear Association's Product Safety/Supply Chain Compliance Seminar, New York, N.Y. June, 2009



Thermo Scientific Niton Analyzer Worldwide Service Centers

Superior XRF analysis solutions, backed by our worldwide sales and service

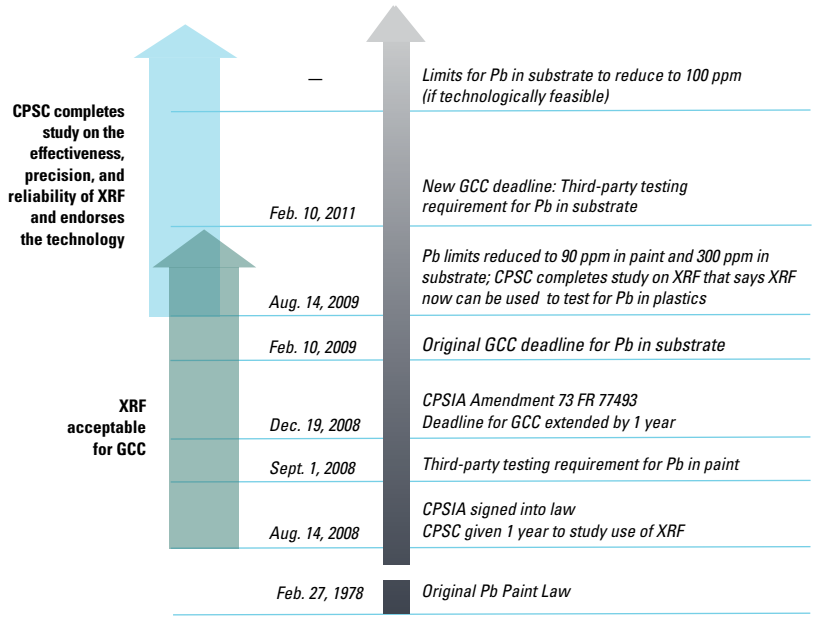
We are recognized as the leader in XRF analysis technology, serving companies in more than 75 countries on six continents. We serve our customers through corporate resources and a dedicated network of more than 70 distributors and 30 factory-trained service centers around the world to provide the most effective customer service possible. Our global reach and resources not only ensure worry-free product support, we also offer comprehensive services including application consulting and training anywhere you need them.

Thermo Scientific Niton XRF analyzers:

Enabling cost-effective compliance, year after year

Our XRF analyzers are the cost-effective solution for maintaining compliance for lead and other toxins as regulations become even more stringent over time.

Although lead has been the main focus of the toy recalls and CPSIA, it is only one of eight elements that is regulated in toys designed for children (ASTM F963-08). Additional elements that require monitoring are arsenic (As), selenium (Se), cadmium (Cd), antimony (Sb), barium (Ba), mercury (Hg), and hexavalent chromium (CrVI).



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