

Thermo Scientific Niton XL2 GOLDD Series Analyzers

Consumer Goods Screening – Elemental Limits of Detection in Metals

The Niton® XL2 GOLDD Series x-ray fluorescence (XRF) analyzer is the performance choice for your toughest testing applications. These purpose-built instruments for consumer goods analysis utilize a proprietary Fundamental Parameters (FP)-based routine and Thermo Scientific TestAll technology for quick and accurate results on plastics, polymers, and metal alloy samples, including solders, with no user input.

The chart below details the sensitivity, or limits of detection (LODs)¹ of the Niton XL2 GOLDD Series for specific metal matrices. LODs are calculated as three standard deviations (99.7% confidence interval) for each element for a 60-second total analysis time.



Limits of detection (LODs) are dependent on the following factors:

- Testing time
- Interferences/matrix
- Level of statistical confidence

Please Note:

Ongoing research and advancements in our Niton XL2 Series analyzers with geometrically optimized large area drift detector (GOLDD) technology will lead to continual improvement in many of the values detailed in this chart. Contact a Thermo Fisher Scientific office or your local representative for the latest performance specifications.

Actual analysis time is based on your requirements, and, in most cases, shorter times will give you the detection limits you require. For example, if analysis time was reduced from 60 seconds to 15 seconds, then the detection limits obtained would be double the values shown in the chart. Similarly, increasing the analysis time will reduce the detection limits by the square root of the increased time.

A/S = Application-specific
N/A = Not applicable

1. Definition and Procedure for the Determination of the Method of Detection Limit, 40 CFR, Part 136, Appendix B. Revision 1.11. U.S. Environmental Protection Agency. U.S. Government Printing Office: Washington, DC, 1995.

Limits of Detection in ppm (mg/kg)						
Elements	Time	30s / filter				
	Matrix	Al	Fe	Cu	Zn	Sn
	Ba	60	200	250	300	2200
	Sb	20	70	80	100	400
	Sn	20	60	70	80	N/A
	In	15	40	55	60	300
	Cd	20	40	45	50	220
	Pd	10	20	25	30	50
	Ag	A/S	A/S	A/S	A/S	A/S
	Bi	15	40	65	400	100
	Pb	15	80	65	75	120
	Hg	25	120	150	1250	130
	Br	5	20	30	125	25
	Au	50	200	250	7500	300
	Pt	50	200	350	1000	300
	Zn	25	80	250	N/A	150
	Cu	50	250	N/A	200	250
	Ni	100	400	200	80	600
	Co	100	1250	75	125	450
	Fe	150	N/A	120	350	750
	Cr	250	150	150	150	1200
	V	700	220	220	250	2500
	Ti	1300	350	325	400	5000

Element list shown is not exhaustive. For limits of detection for elements not shown, please contact a Thermo Fisher Scientific office or your local representative.

In addition to the offices listed below, Thermo Scientific Niton Analyzers maintains a network of sales and service organizations throughout the world.

Americas

Billerica, MA USA

US Toll Free: 800 875-1578

+1 978 670 7460

niton@thermofisher.com

Europe, Middle East, Africa, and South Asia

Munich, Germany

+49 89 3681 380

niton.eur@thermofisher.com

thermofisher.com

Asia Pacific

Central, Hong Kong

+852 2869 6669

niton.asia@thermofisher.com

thermofisher.com

www.thermoscientific.com/niton

©2010 Thermo Fisher Scientific Inc.

All rights reserved.

All trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries.

Specifications, terms and pricing are subject to change. Not all products are available in all countries. Please consult your local sales representative for details.

AN44825 07/2010

Thermo
SCIENTIFIC