

Low limits, high standards

Elemental limits of detection

The Thermo Scientific™ Niton™ XL5 Plus handheld XRF analyser is built for your most demanding applications. Where low detection limits and high sample throughput are critical, the Niton XL5 Plus' combination of hardware and software provide you with solutions to meet your most difficult analytical requirements.

The chart below details the typical sensitivity, or limits of detection (LODs)¹ of the Niton XL5 Plus in parts per million (PPM) for various elements in polyethylene (PE) and polyvinyl chloride (PVC) plastics. LODs are calculated as three standard deviations (99.7% confidence interval) for each element, using 60-second analysis times per filter (120 seconds total analysis time).



Limits of Detection (mg/kg)		
Time: 60s per filter		
Element	PE	PVC
Bi	1	6
Pb	1	4
Hg	1	7
Au	1	15
Ba	28	47
Sb	8	12
Sn	7	12
Cd	4	8
Sr	1	5
Br	1	3
Se	1	4
As	1	7
Zn	2	29
Cu	2	22
Ni	2	20
Co	3	33
Fe	8	81
Mn	12	120
Cr	4	13
Ti	3	19
Ca	3	23
Cl	7	59
Al	6	N/A

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

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

Please note:

Ongoing research and advancements in our Niton XL5 Plus analysers will lead to continual improvement in many of the values detailed in this chart. Contact Niton UK for the latest performance specifications.

Actual analysis time is based on your requirements. In most cases, shorter times will provide you with the detection limits required. For example, if analysis time is reduced from 60 seconds per filter to 15 seconds per filter, then the detection limits obtained would be twice the values shown in the chart. Similarly, increasing the time of analysis will reduce the detection limits by the square root of the increased time.

© 2020 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries. Preliminary specifications, terms and pricing are subject to change. Not all products are available in all countries. Please consult Niton UK for details.

01256 397860
info@nitonuk.co.uk
nitonuk.co.uk

Niton UK Ltd, Unit 17-19 The Calvert Centre, Woodmancott, Winchester SO21 3BN

