

# X-MET5100

## Element Detection Limits for different materials - Restricted Materials

### Plastics

Element Detection limits in Polymers (Polyethylene plastic), ppm

Meas. Time	Cr	Br	Cd	Hg	Pb	Ni	Se	Sb	Ba	As	Cl <sup>(1)</sup>	Cl <sup>(2)</sup>
30s	9	< 5	12	1.2	1.0	6	< 5	24	124	< 5	0,92%	1,84%
60s	6	< 5	9	< 1	< 1	< 5	< 5	17	88	< 5	0,65%	1,30%
120s	<5	< 5	6	< 1	< 1	< 5	< 5	12	62	< 5	0,46%	0,92%

### Metal Alloys

Element Detection limits in different Metal alloys, ppm

Matrix	Meas. Time	Cr	Cd	Pb
Al-matrix	30s	144	21	11
	60s	102	15	8
	120s	72	11	6
Cu-matrix	30s	52	30	55
	60s	37	21	39
	120s	26	15	28
Fe-matrix	30s	106	58	69
	60s	75	41	49
	120s	53	29	35
Sn-matrix	30s	513	65	38
	60s	363	46	27
	120s	257	33	19

Limit of detection (LOD) is quoted for each matrix at three sigma (99.7%) confidence level. Individual LOD's improve as a function of the square root of the measuring time. All detection limits are specified for interference-free matrix.

LOD's are listed in parts per million (ppm) unless otherwise stated. Limit of detection reflects instrument precision (repeatability), but it is not a direct indication of instrument accuracy.

Limits of detection are dependent on the following factors.

- Matrix Interferences, overlapping elements etc.
- Level of statistical confidence
- Measuring time

Chlorine (Cl) detection limits depends on the protection window. Cl<sup>(1)</sup> detection limits are valid for X-MET5100 with thin protection window.

Cl<sup>(2)</sup> detection limits are valid for X-MET5100 with standard Kapton® protection window.