EAG LABORATORIES | Eurofins Materials Science

APPLICATION NOTE

SIMS Detection Limits of Selected Elements in HgCdTe Under Normal Depth Profiling Conditions

DISCUSSION

SIMS is a powerful analytical technique which allows detection of all elements from H to U with excellent sensitivity. The table provides a list of typical detection limits for impurities in a HgCdTe matrix for normal depth profiling conditions. Lower detection levels can be obtained for many species under optimal analytical conditions on a case-by-case situation.

O_2+ Primary Ion Beam Positive Ions		Cs^+ Primary Ion Beam Negative Ions		Cs^+ Primary Ion Beam Positive Ions (CsM^+)	
Element	**DL (atoms/cm³)**	**Element**	**DL (atoms/cm³)**	**Element**	**DL (atoms/cm³)**
Li	3E+11	H	1E+16	Zn	2E+15
Be	1E+14	C	1E+15	As	2E+14
B	3E+13	N	5E+15	-	-
Na	5E+12	O	5E+15	-	-
Mg	3E+12	F	5E+13	-	-
Al	1E+12	Si	5E+15	-	-
K	2E+12	P	5E+13	-	-
Ca	3E+12	S	1E+14	-	-
Ti	1E+13	Cl	1E+14	-	-
V	1E+13	Cu	1E+16	-	-
Cr	1E+13	As	1E+15	-	-
Mn*	5E+15/5E+13*	Br	5E+13	-	-
Fe*	5E+15/5E+13*	Sb	1E+16	-	-
Ni*	2E+16/5E+14*	I	5E+12	-	-
Cu*	1E+17/5E+14*	Au	5E+13	-	-
Zn	2E+16	-	-	-	-
Ga	1E+13	-	-	-	-
As	1E+16	-	-	-	-
Mo	1E+14	-	-	-	-
Ag	5E+14	-	-	-	-
In	3E+12				
Sb	3E+15				
W	2E+14				

* Special Instrument Setup

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