



AN 338

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

May 4, 2007 (Version 3.0)

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/cm ³)	Element	DL (atoms/cm ³)	Element	DL (atoms/cm ³)
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			

United States Locations

Tempe, Arizona
+1 480 239 0602 info.az@eaglabs.com
+1 602 470 2655 fax

Sunnyvale, California
810 Kifer Road
+1 408 530 3500 info.ca@eaglabs.com
+1 408 530 3501 fax

1135 E Arques Avenue
+1 408 738 3033
+1 408 738 3035 fax

785 Lucerne Drive
+1 408 737 3892
+1 408 737 3916 fax

Peabody, Massachusetts
+1 978 278 9500 info.ma@eaglabs.com
+1 978 278 9501 fax

Chanhassen, Minnesota
+1 952 828 6411 info.mn@eaglabs.com
+1 952 828 6449 fax

East Windsor, New Jersey
+1 609 371 4800 info.nj@eaglabs.com
+1 609 371 5666 fax

Syracuse, New York
+1 315 431 9900 info.ny@eaglabs.com
+1 315 431 9800 fax

Raleigh, North Carolina
+1 919 829 7041 info.nc@eaglabs.com
+1 919 829 5518 fax

Round Rock, Texas
+1 512 671 9500 info.tx@eaglabs.com
+1 512 671 9501 fax

International Locations

Shanghai, China
+ 86 21 6879 6088 info.cn@eaglabs.com
+ 86 21 6879 9086 fax

Tournefeuille, France
+ 33 5 61 73 15 29 info.fr@eaglabs.com
+ 33 5 61 73 15 67 fax

Frankfurt, Germany
+ 49 (0) 693053213 info.de@eaglabs.com
+ 49 (0) 69307941 fax

Tokyo, Japan
+ 81 3 5396 0531 info.jp@eaglabs.com
+ 81 3 5396 1930 fax

HsinChu, Taiwan
+ 886 3 5632303 info.tw@eaglabs.com
+ 886 3 5632306 fax

Uxbridge, United Kingdom
+ 44 (0) 1895 811194 info.uk@eaglabs.com
+ 44 (0) 1895 810350 fax