



Certificate of Analysis

ICP-MS Stock Tuning Solution (100mL)

Agilent Part Number: 5188-6564

Lot Number: 14-186VY

Analyte	CAS#	Labeled Conc.	Measured Conc.	SRM	Start Mat'l Formula	Start Mat'l Purity	Analyte	CAS#	Labeled Conc.	Measured Conc.	SRM	Start Mat'l Formula	Start Mat'l Purity
Ce	7440-45-1	10.0 mg/L	9.93 mg/L	3110*	Ce(NO3)3 · 6H2O	99.99+	Tl	7440-28-0	10.0 mg/L	9.94 mg/L	3158*	Tl(NO3)	99.99+
Co	7440-48-4	10.0 mg/L	9.99 mg/L	3113*	Co	99.99+	Y	7440-65-5	10.0 mg/L	9.98 mg/L	3167a*	Y2O3	99.99+
Li	7439-93-2	10.0 mg/L	10.0 mg/L	3129a*	Li2CO3	99.99+							

* - indicates NIST SRM

† - indicates CRM (when NIST SRM is not available)

Purity grades:

Starting Materials:

Shown above

Matrix:

2% HNO₃:

HNO₃ (CAS No. 7697-37-2) high purity grade

Traceability:

This standard has been produced gravimetrically and volumetrically using ISO 9001 quality procedures. ICP / ICP-MS Spectrometer was used to determine the concentration of the main elements via NIST SRMs shown above, as well as the impurities. Other reference standards used: 12-128VY, 12-215VY.

Trace Metallic Impurities in the Actual Solution, in µg/L, via ICP-MS Analysis, results are accurate to ±10%:

Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.
Ag	0.07	Cs	0.02	Ho	<0.01	Nd	<0.01	Ru	<0.04	Te	<0.1
Al	<0.6	Cu	0.1	In	<0.01	Ni	<0.09	Sb	<0.03	Th	<0.01
As	<3	Dy	<0.01	Ir	<0.01	P	<30	Sc	<0.3	Ti	<0.1
Au	<0.02	Er	<0.1	K	0.2	Pb	0.08	Se	<0.2	Tm	<0.1
B	<0.4	Eu	0.04	La	0.3	Pd	0.1	Si	<40	U	<0.01
Ba	<0.09	Fe	0.3	Lu	<0.1	Pr	0.1	Sm	<0.01	V	<0.01
Be	<0.06	Ga	<1	Mg	<0.4	Pt	<0.03	Sn	0.04	W	<0.1
Bi	<0.01	Gd	<1	Mn	0.02	Rb	0.02	Sr	<0.05	Yb	<0.1
Ca	<1	Ge	<0.1	Mo	<0.01	Re	<0.01	Ta	<0.02	Zn	<0.2
Cd	<0.01	Hf	<0.01	Na	0.7	Rh	<0.03	Tb	<2	Zr	<0.02
Cr	<0.1	Hg	<0.2	Nb	<0.03						

Balances are calibrated regularly with weight sets traceable to NIST.

Agilent reference standards are guaranteed stable and accurate to ±0.5% of measured analyte concentration. For these solutions we use the highest purity acids applicable, 18 megohm double deionized water and acid-leached, triple rinsed bottles. All glassware used is class A.

Date of release: August 31, 2009

Date of expiration: February 28, 2011

QC Coordinator
CertiPrep, Inc.

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