

# Certificate of Analysis

## ICP-MS Stock Tuning Solution (100mL)

**Agilent Part Number: 5188-6564**
**Lot Number: 15-214VY**

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	10.0 mg/L	3110*	Ce(NO <sub>3</sub> ) <sub>3</sub> · 6H <sub>2</sub> O	99.99+	Tl	7440-28-0	10.0 mg/L	9.98 mg/L	3158*	Tl(NO <sub>3</sub> )	99.99+
Co	7440-48-4	10.0 mg/L	9.97 mg/L	3113*	Co	99.99+	Y	7440-65-5	10.0 mg/L	9.89 mg/L	3167a*	Y <sub>2</sub> O <sub>3</sub>	99.99+
Li	7439-93-2	10.0 mg/L	10.1 mg/L	3129a*	Li <sub>2</sub> CO <sub>3</sub>	99.99+							

\* - indicates NIST SRM

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

**Purity grades:**

Starting Materials: Shown above

Matrix:

 2% HNO<sub>3</sub>: HNO<sub>3</sub> (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, 14-186VY.

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

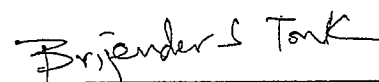
Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.
Ag	1	Cs	<0.1	Ho	<0.01	Nd	<0.1	Ru	<0.2	Te	<0.7
Al	8	Cu	0.6	In	<0.06	Ni	<1	Sb	<0.3	Th	<0.03
As	2	Dy	<0.01	Ir	<0.1	P	<200	Sc	<3	Ti	<1
Au	<0.3	Er	<0.01	K	<10	Pb	<0.08	Se	<3	Tm	<0.01
B	<4	Eu	<0.07	La	0.3	Pd	<0.2	Si	<100	U	<0.02
Ba	<0.1	Fe	<1	Lu	<0.01	Pr	0.08	Sm	<0.2	V	<0.1
Be	<6	Ga	<1	Mg	<3	Pt	<0.05	Sn	<0.2	W	<0.8
Bi	<0.02	Gd	<1	Mn	<0.3	Rb	<0.2	Sr	<0.02	Yb	<0.01
Ca	20	Ge	<1	Mo	<0.08	Re	<0.06	Ta	<0.04	Zn	<0.7
Cd	<0.2	Hf	<0.01	Na	<0.2	Rh	<0.1	Tb	<0.5	Zr	<0.6
Cr	<0.1	Hg	<0.6	Nb	<0.2						

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: April 15, 2010

Date of expiration: October 31, 2011



 QC Coordinator  
 CertiPrep, Inc.