Agilent Technologies

Certificate of Analysis

ICP-MS Stock Tuning Solution (100mL)

Agilent Part Number: 5188-6564 **Lot Number:** 19-246VYY2

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*	$Ce(NO_3)_3 \cdot 6H_2O$	99.99+	Tl	7440-28-0	10.0 mg/L	9.97 mg/L	3158*	$TlNO_3$	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*	Y_2O_3	99.99+
Li	7439-93-2	10.0 mg/L	9.97 mg/L	3129a*	Li_2CO_3	99.99+							

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

Purity grades:

Starting Materials: Shown above

Matrix:

2% HNO_3: HNO_3 (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: 19-67VY,19-66VY,17-264VY,17-150VY.

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	<0.06	Cs	<0.02	Ho	<0.01	Nd	<0.03	Ru	<0.04	Te	<0.8
Al	<0.2	Cu	<0.7	In	<0.04	Ni	<0.1	Sb	<0.1	Th	<0.2
As	<1	Dy	<0.02	Ir	<0.3	P	<100	Sc	<0.2	Ti	<0.01
Au	<0.1	Er	<0.02	K	<300	Pb	<0.1	Se	<0.6	Tm	<0.01
B	<8	Eu	<0.01	La	0.4	Pd	<0.1	Si	<100	U	<0.02
Ba	<0.2	Fe	<10	Lu	<0.01	Pr	0.1	Sm	<0.02	V	<0.8
Be	<0.06	Ga	0.3	Mg	<0.4	Pt	<0.07	Sn	<0.2	W	<2
Bi	<0.03	Gd	0.06	Mn	<0.2	Rb	<0.3	Sr	<0.02	Yb	<0.02
Ca	10	Ge	<6	Mo	<2	Re	<0.02	Ta	<0.4	Zn	<0.5
Cd	<0.07	Hf	<0.03	Na	<4	Rh	<0.08	Tb	1	Zr	<0.2
Cr	<0.03	Hg	<1	Nb	<0.1						

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: May 31, 2013

Date of expiration: November 30, 2014

Brijender S Tonk

QC Coordinator
CertiPrep, Inc.