Agilent Technologies

Certificate of Analysis

ICP-MS Stock Tuning Solution (100mL)

Agilent Part Number: 5188-6564 **Lot Number:** 19-66VYY2

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	9.91 mg/L	3110*	$Ce(NO_3)_3 \cdot 6H_2O$	99.99+	Tl	7440-28-0	10.0 mg/L	9.88 mg/L	3158*	$TlNO_3$	99.99+
Co	7440-48-4	10.0 mg/L	9.93 mg/L	3113*	Co	99.99+	Y	7440-65-5	10.0 mg/L	9.88 mg/L	3167a*	Y_2O_3	99.99+
Li	7439-93-2	10.0 mg/L	9.90 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: 14-186VY,16-161VY,17-150VY,17-263VY.

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	<0.3	Cs	<0.04	Ho	<0.02	Nd	<0.02	Ru	<0.01	Te	<0.1
Al	0.6	Cu	<3	In	<0.01	Ni	<10	Sb	<0.05	Th	<0.03
As	<20	Dy	<0.01	Ir	<0.1	P	<100	Sc	0.06	Tl	<2
Au	<0.2	Er	<0.01	K	<90	Pb	0.09	Se	<7	Tm	<0.01
B	<0.5	Eu	<0.01	La	0.9	Pd	0.1	Si	<100	U	<0.02
Ba	<0.03	Fe	1	Lu	<0.01	Pr	0.2	Sm	<0.03	V	<0.1
Be	<0.1	Ga	<0.4	Mg	<0.2	Pt	<0.1	Sn	<0.04	W	<0.2
Bi	<0.02	Gd	<0.1	Mn	<0.05	Rb	<0.04	Sr	<0.05	Yb	<0.01
Ca	<10	Ge	<0.2	Mo	<0.1	Re	<0.01	Ta	<0.2	Zn	<0.3
Cd	<0.03	Hf	<0.01	Na	<2	Rh	<0.02	Tb	<0.1	Zr	<0.4
Cr	<0.2	Hg	<0.8	Nb	<0.09						

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: June 30, 2012

Date of expiration: December 31, 2013

Brijender S Tonk

QC Coordinator
CertiPrep, Inc.