Agilent Technologies

Certificate of Analysis

ICP-MS Stock Tuning Solution (100mL)

Agilent Part Number: 5188-6564 **Lot Number:** 16-161VY

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*	$Ce(NO_3)_3 \cdot 6H_2O$	99.99+	Tl	7440-28-0	10.0 mg/L	9.98 mg/L	3158*	$TlNO_3$	99.99+
Co	7440-48-4	10.0 mg/L	10.0 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	10.0 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,12-128VY,15-214VY.

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	0.07	Ho	<0.01	Nd	<0.01	Ru	<0.5	Te	<0.3
Al	4	Cu	0.06	In	<0.02	Ni	0.4	Sb	<0.2	Th	<0.06
As	<1	Dy	<0.01	Ir	<0.06	P	<100	Sc	<0.2	Ti	<1
Au	0.7	Er	<0.01	K	5	Pb	0.08	Se	<5	Tm	<0.1
B	3	Eu	<0.01	La	0.4	Pd	<0.1	Si	<200	U	0.2
Ba	<0.05	Fe	0.5	Lu	<0.01	Pr	0.09	Sm	<0.08	V	<0.02
Be	<0.3	Ga	0.6	Mg	<2	Pt	<0.2	Sn	<0.1	W	<1
Bi	0.06	Gd	0.5	Mn	<0.1	Rb	<0.08	Sr	<0.1	Yb	<0.01
Ca	5	Ge	<0.3	Mo	<0.04	Re	<0.02	Ta	0.03	Zn	<1
Cd	<0.04	Hf	<0.01	Na	6	Rh	<0.04	Tb	1	Zr	<0.2
Cr	<0.1	Hg	<0.4	Nb	<0.01						

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.

Brijender S Tank

QC Coordinator
CertiPrep, Inc.

Date of release: September 30, 2010

Date of expiration: March 31, 2012