Agilent Technologies

Certificate of Analysis

ICP-MS Tuning Solution 10 ppm 100mL

Agilent Part Number: **5190-0465** **Lot Number:** **20-50VYY2**

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	9.96 mg/L	3110*	$Ce(NO_3)_3 \cdot 6H_2O$	99.99+	Mg	7439-95-4	10.0 mg/L	9.87 mg/L	3131a*	Mg	99.99+
Co	7440-48-4	10.0 mg/L	9.86 mg/L	3113*	Co	99.99+	Tl	7440-28-0	10.0 mg/L	10.0 mg/L	3158*	$TlNO_3$	99.99+
Li	7439-93-2	10.0 mg/L	9.90 mg/L	3129a*	Li_2CO_3	99.99+	Y	7440-65-5	10.0 mg/L	9.98 mg/L	3167a*	Y_2O_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: 17-22VY,42-15AS,CL-2-227YP.

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	<0.01	Ho	<0.01	Nd	<0.03	Ru	<1	Te	<0.3
Al	<0.4	Cu	<0.8	In	<0.08	Ni	<0.2	Sb	<0.4	Th	<0.4
As	2	Dy	<0.01	Ir	<0.4	P	<100	Sc	<0.5	Ti	<1
Au	<0.3	Er	<0.01	K	<100	Pb	<0.3	Se	<1	Tm	<0.02
B	<4	Eu	<0.01	La	0.5	Pd	<0.6	Si	<100	U	<0.01
Ba	<0.2	Fe	2	Lu	<0.02	Pr	0.1	Sm	<0.07	V	<0.6
Be	<0.1	Ga	0.4	Mn	<0.4	Pt	<0.2	Sn	<0.06	W	<5
Bi	<0.8	Gd	0.04	Mo	<4	Rb	<0.2	Sr	<0.06	Yb	<0.03
Ca	15	Ge	<0.6	Na	<10	Re	<0.02	Ta	<0.6	Zn	<0.2
Cd	<0.03	Hf	<0.02	Nb	<0.3	Rh	<0.07	Tb	0.9	Zr	<0.4
Cr	<0.3	Hg	<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: April 30, 2013

Date of expiration: October 31, 2014

Brijender S Tonk

QC Coordinator

Visit Agilent on the world wide web: www.agilent.com/chem/supplies