Agilent Technologies

Certificate of Analysis

ICP-MS Tuning Solution 10 ppm 100mL

Agilent Part Number: 5190-0465 **Lot Number:** 19-91VYY2

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	<0.4	Cs	<0.6	Ho	<0.01	Nd	<0.2	Ru	<1	Te	<2
Al	<20	Cu	<0.7	In	0.06	Ni	<0.7	Sb	<0.1	Th	<0.3
As	<10	Dy	<0.09	Ir	<0.3	P	<200	Sc	<2	Tl	<10
Au	<1	Er	<0.07	K	<7	Pb	<0.1	Se	<2	Tm	<0.2
B	<4	Eu	<0.06	La	0.5	Pd	0.6	Si	<200	U	0.03
Ba	<0.5	Fe	<1	Lu	<0.04	Pr	0.02	Sm	<0.2	V	<0.01
Be	<1	Ga	<2	Mn	<0.3	Pt	<0.5	Sn	<0.5	W	<0.9
Bi	<0.2	Gd	<1	Mo	<0.5	Rb	<0.3	Sr	<0.3	Yb	<0.1
Ca	<5	Ge	<2	Na	<2	Re	<0.1	Ta	0.2	Zn	<2
Cd	<0.4	Hf	<0.1	Nb	<0.4	Rh	<0.7	Tb	2	Zr	<1
Cr	<0.1	Hg	<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: July 31, 2012

Date of expiration: January 31, 2014

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