Agilent Technologies

Certificate of Analysis

ICP-MS Tuning Solution 10 ppm 100mL

Agilent Part Number: 5190-0465 **Lot Number:** 22-24VYY2

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 µg/mL	9.86 µg/mL	3110*	$Ce(NO_3)_3 \cdot 6H_2O$	99.99+	Mg	7439-95-4	10.0 µg/mL	9.90 µg/mL	3131a*	Mg	99.99+
Co	7440-48-4	10.0 µg/mL	9.87 µg/mL	3113*	Co	99.99+	Tl	7440-28-0	10.0 µg/mL	9.91 µg/mL	3158*	$TlNO_3$	99.99+
Li	7439-93-2	10.0 µg/mL	9.86 µg/mL	3129a*	Li_2CO_3	99.99+	Y	7440-65-5	10.0 µg/mL	9.88 µg/mL	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. Agilent 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: all 8, 20-50VY.

Trace Metallic Impurities in the Actual Solution, in µg/L, via Agilent ICP-MS Analysis, results are accurate to ±10%:

Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.
Ag	<0.08	Cs	<0.01	Ho	<0.01	Nd	<0.04	Ru	<0.2	Te	<0.2
Al	0.8	Cu	<0.1	In	<0.01	Ni	<0.6	Sb	<0.09	Th	<0.1
As	<0.5	Dy	<0.01	Ir	<0.02	P	<100	Sc	<0.2	Ti	<0.1
Au	<0.06	Er	<0.01	K	5	Pb	<0.1	Se	<6	Tm	<0.01
B	<0.5	Eu	<0.01	La	<0.01	Pd	<0.2	Si	<100	U	<0.01
Ba	<0.2	Fe	<2	Lu	<0.01	Pr	0.09	Sm	<0.01	V	<0.03
Be	<0.3	Ga	1	Mn	0.5	Pt	<0.1	Sn	<0.2	W	<0.04
Bi	<0.1	Gd	0.06	Mo	<1	Rb	<0.2	Sr	<0.03	Yb	<0.01
Ca	<5	Ge	<1	Na	<3	Re	<0.02	Ta	<0.02	Zn	<2
Cd	<0.05	Hf	<0.01	Nb	<0.4	Rh	0.02	Tb	0.5	Zr	<0.3
Cr	<0.2	Hg	<0.2								

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: March 15, 2015
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