Agilent Technologies

Certificate of Analysis

Tuning Solution for ICP-MS

Agilent Part Number: 5185-5959 **Lot Number:** 26-194GSX2

Analyte	CAS#	Labeled Conc.	Measured Conc.	SRM	Start Matl Formula	Start Matl Purity	Analyte	CAS#	Labeled Conc.	Measured Conc.	SRM	Start Matl Formula	Start Matl Purity
Ce	7440-45-1	1.00 µg/L	0.990 µg/L	3110*	$Ce_2(CO_3)_3.x(H_2O)$	99.99+	Mg	7439-95-4	1.00 µg/L	0.995 µg/L	3131a*	Mg	99.99+
Co	7440-48-4	1.00 µg/L	1.00 µg/L	3113*	Co	99.99+	Tl	7440-28-0	1.00 µg/L	1.00 µg/L	3158*	$TlNO_3$	99.99+
Li	7439-93-2	1.00 µg/L	1.00 µg/L	3129a*	Li_2CO_3	99.99+	Y	7440-65-5	1.00 µg/L	0.992 µg/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:

2wt% 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, 26-147GS,26-128GS.

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	<0.01	Cs	<0.01	Ho	<0.01	Nd	<0.01	Ru	<0.01	Te	<0.01
Al	<0.03	Cu	<0.01	In	<0.01	Ni	<0.01	Sb	<0.01	Th	<0.01
As	<0.01	Dy	<0.01	Ir	<0.01	P	<10	Sc	<0.01	Ti	<0.01
Au	<0.01	Er	<0.01	K	<0.1	Pb	<0.01	Se	<0.01	Tm	<0.01
B	<0.01	Eu	<0.01	La	<0.01	Pd	<0.01	Si	<5	U	<0.01
Ba	<0.01	Fe	<0.1	Lu	<0.01	Pr	<0.01	Sm	<0.01	V	<0.01
Be	<0.01	Ga	<0.01	Mn	<0.01	Pt	<0.01	Sn	<0.01	W	<0.01
Bi	<0.01	Gd	<0.01	Mo	<0.01	Rb	<0.01	Sr	<0.01	Yb	<0.01
Ca	<0.1	Ge	<0.01	Na	<0.03	Re	<0.01	Ta	<0.01	Zn	<0.03
Cd	<0.01	Hf	<0.01	Nb	<0.01	Rh	<0.01	Tb	<0.01	Zr	<0.01
Cr	<0.01	Hg	<0.01								

Balances are calibrated regularly with weight sets traceable to NIST.

Agilent reference standards are guaranteed stable and accurate to ±10% of measured analyte concentration. This uncertainty is at 95% confidence interval, a coverage factor of 2. 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. This standard was manufactured following the guidelines set forth under ISO 17025 and ISO Guide 34 regulations.

Date of release: April 15, 2018

Date of expiration: April 30, 2019

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QC Coordinator

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