Agilent Technologies

Certificate of Analysis

Tuning Solution for ICP-MS

Agilent Part Number: 5185-5959 **Lot Number:** 32-239GSX2

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	1.00 µg/L	0.998 µg/L	3110*	$Ce_2(CO_3)_3.x(H_2O)$	99.99+	Mg	7439-95-4	1.00 µg/L	1.02 µg/L	3131a*	Mg	99.99+
Co	7440-48-4	1.00 µg/L	0.997 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	1.01 µg/L	3129a*	Li_2CO_3	99.99+	Y	7440-65-5	1.00 µg/L	0.990 µg/L	3167a*	$Y(NO_3)_3$-$6H_2O$	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, 32-178GS, 32-212GS.

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	<0.05	Cs	<0.05	Ho	<0.05	Nd	<0.05	Ru	<0.05	Te	<0.05
Al	<0.3	Cu	<0.05	In	<0.05	Ni	<0.05	Sb	<0.05	Th	<0.05
As	<0.05	Dy	<0.05	Ir	<0.05	P	<50	Sc	<0.05	Ti	<0.05
Au	<0.05	Er	<0.05	K	<1	Pb	<0.05	Se	<0.1	Tm	<0.05
B	<0.5	Eu	<0.05	La	<0.05	Pd	<0.05	Si	<50	U	<0.05
Ba	<0.05	Fe	<0.3	Lu	<0.05	Pr	<0.05	Sm	<0.05	V	<0.05
Be	<0.05	Ga	<0.05	Mn	<0.05	Pt	<0.05	Sn	<0.05	W	<0.05
Bi	<0.05	Gd	<0.05	Mo	<0.05	Rb	<0.05	Sr	<0.05	Yb	<0.05
Ca	<1	Ge	<0.05	Na	<1	Re	<0.05	Ta	<0.05	Zn	<0.3
Cd	<0.05	Hf	<0.05	Nb	<0.05	Rh	<0.05	Tb	<0.05	Zr	<0.05
Cr	<0.05	Hg	<0.05								

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 17034 regulations.

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Date of expiration: February 28, 2021

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QC Coordinator

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