Agilent Technologies

Certificate of Analysis

ICP-MS Stock Tuning Solution (100 mL)

Agilent Part Number: 5188-6564 **Lot Number:** 7-246MFY2

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	10.1 µg/mL	3110*	$Ce_2(CO_3)_3.x(H_2O)$	99.99+	Tl	7440-28-0	10.0 µg/mL	10.0 µg/mL	3158*	$TlNO_3$	99.99+
Co	7440-48-4	10.0 µg/mL	10.0 µg/mL	3113*	Co	99.99+	Y	7440-65-5	10.0 µg/mL	10.1 µg/mL	3167a*	Y_2O_3	99.99+
Li	7439-93-2	10.0 µg/mL	10.0 µg/mL	3129a*	Li_2CO_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: 2-193MJ, 57-019CR.

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	0.1	Cs	<0.3	Ho	<0.02	Nd	<0.01	Ru	<0.01	Te	<0.7
Al	1	Cu	<0.3	In	<0.03	Ni	<0.01	Sb	<0.1	Th	<0.05
As	<0.9	Dy	<0.04	Ir	<0.04	P	<100	Sc	<0.3	Ti	<0.01
Au	<0.1	Er	<0.01	K	<60	Pb	<0.4	Se	<4	Tm	<0.01
B	<2	Eu	<0.01	La	<0.01	Pd	<0.1	Si	<100	U	0.02
Ba	<0.2	Fe	<2	Lu	<0.01	Pr	0.2	Sm	<0.07	V	<0.09
Be	<0.2	Ga	0.3	Mg	<0.2	Pt	<0.06	Sn	<0.2	W	<0.2
Bi	<0.05	Gd	0.3	Mn	<0.2	Rb	<0.2	Sr	<0.1	Yb	<0.01
Ca	6	Ge	<0.01	Mo	<0.2	Re	<0.02	Ta	<0.08	Zn	1
Cd	<0.01	Hf	<0.01	Na	5	Rh	<0.04	Tb	1	Zr	0.3
Cr	<0.3	Hg	<0.3	Nb	<0.01						

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. 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.

Date of release: June 15, 2022

Date of expiration: December 31, 2023

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QC Coordinator

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