

Certificate of Analysis

ICP-MS Stock Tuning Solution (100 mL)

Agilent Part Number: 5188-6564
Lot Number: 10-224ABY2

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	9.87 µg/mL	3110*	Ce ₂ (CO ₃) ₃ ·x(H ₂ O)	99.99+	Ti	7440-28-0	10.0 µg/mL	9.89 µg/mL	3158*	TiNO ₃	99.99+
Co	7440-48-4	10.0 µg/mL	9.94 µg/mL	3113*	Co	99.99+	Y	7440-65-5	10.0 µg/mL	9.92 µg/mL	3167a*	Y(NO ₃) ₃ ·6H ₂ O	99.99+
Li	7439-93-2	10.0 µg/mL	9.92 µg/mL	3129a*	Li ₂ CO ₃	99.99+							

* - indicates NIST SRM

† - indicates CRM (when NIST SRM is not available)

Purity grades:

Starting Materials: Shown above

Matrix:

 2% HNO₃: HNO₃ (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, 10-223AB, 2-54MJ, 2-62YJ.

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

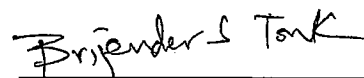
Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.
Ag	<0.03	Cs	<0.01	Ho	0.04	Nd	0.1	Ru	0.05	Te	<0.08
Al	0.9	Cu	<0.05	In	<0.02	Ni	0.2	Sb	<0.03	Th	<0.01
As	0.1	Dy	0.1	Ir	<0.01	P	<100	Sc	0.1	Ti	<0.01
Au	<0.1	Er	<0.02	K	3	Pb	<0.04	Se	<0.9	Tm	<0.01
B	0.6	Eu	<0.01	La	4	Pd	0.05	Si	<100	U	<0.03
Ba	0.1	Fe	1	Lu	0.01	Pr	4	Sm	<0.04	V	0.03
Be	<0.01	Ga	<0.5	Mg	0.1	Pt	<0.03	Sn	<0.04	W	<0.05
Bi	0.04	Gd	<0.4	Mn	0.08	Rb	<0.02	Sr	0.06	Yb	<0.03
Ca	5	Ge	<0.2	Mo	<0.03	Re	<0.01	Ta	<0.01	Zn	0.6
Cd	<0.01	Hf	<0.01	Na	3	Rh	0.03	Tb	1	Zr	<0.2
Cr	0.1	Hg	<0.1	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 30, 2020

Date of expiration: December 31, 2021



 QC Coordinator