



Certificate of Analysis

ICP-MS Internal Std Mix

Agilent Part Number: 5188-6525

Lot Number: 59-162CRY2

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
Bi	7440-69-9	100 µg/mL	99.1 µg/mL	3106*	Bi	99.99+	Lu	7439-94-3	100 µg/mL	101 µg/mL	3130a*	Lu ₂ O ₃	99.99+
Ge	7440-56-4	100 µg/mL	99.6 µg/mL	3120a*	GeO ₂	99.99+	Rh	7440-16-6	100 µg/mL	99.3 µg/mL	3144*	Rh(NO ₃) ₃ -H ₂ O	99.99+
In	7440-74-6	100 µg/mL	99.5 µg/mL	3124a*	In	99.99+	Sc	7440-20-2	100 µg/mL	101 µg/mL	3148a*	Sc ₂ O ₃	99.99+
Li*	7439-93-2	100 µg/mL	101 µg/mL	3129a*	⁶ Li ₂ CO ₃	99.99+	Tb	7440-27-9	100 µg/mL	99.5 µg/mL	3157a*	Tb ₄ O ₇	99.99+

* - indicates NIST SRM

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

Purity grades:

Starting Materials: Shown above

Matrix:

10% 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: 59-099CR, 59-120CR.

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	<0.4	Co	<0.3	Hf	0.4	Nb	<0.3	Ru	<1	Tl	<3
Al	8	Cr	<1	Hg	<1	Nd	<0.09	Sb	0.1	Tl	<0.2
As	6	Cs	<0.6	Ho	<0.03	Ni	<0.4	Se	<20	Tm	0.07
Au	<0.5	Cu	<0.7	Ir	20	P	<400	Si	<400	U	<0.06
B	<9	Dy	<0.1	K	<400	Pb	2	Sm	<0.1	V	<1
Ba	0.9	Er	<0.3	La	0.1	Pd	<0.2	Sn	0.7	W	<0.5
Be	<2	Eu	<0.02	Mg	8	Pr	<0.06	Sr	6	Y	1
Ca	<100	Fe	<10	Mn	<2	Pt	0.1	Ta	0.02	Yb	0.6
Cd	0.02	Ga	0.08	Mo	<0.3	Rb	<0.8	Te	0.9	Zn	8
Ce	0.04	Gd	0.08	Na	20	Re	<0.1	Th	0.4	Zr	3

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: January 31, 2023

Date of expiration: July 31, 2024

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