



Certificate of Analysis

ICP-MS Internal Std Mix

Agilent Part Number: 5188-6525

Lot Number: 59-047CRY2

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	99.5 µg/mL	3106*	Bi	99.99+	Lu	7439-94-3	100 µg/mL	100 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	99.2 µg/mL	3144*	Rh	99.99+
In	7440-74-6	100 µg/mL	99.1 µg/mL	3124a*	In	99.99+	Sc	7440-20-2	100 µg/mL	100 µg/mL	3148a*	Sc ₂ O ₃	99.99+
Li*	7439-93-2	100 µg/mL	99.7 µg/mL	3129a*	⁶ Li ₂ CO ₃	99.99+	Tb	7440-27-9	100 µg/mL	99.6 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: 58-130CR, 59-046CR, 58-236CR.

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	<0.2	Co	<0.4	Hf	0.3	Nb	0.2	Ru	<0.3	Ti	3
Al	10	Cr	<0.5	Hg	<0.1	Nd	<0.05	Sb	0.3	Tl	<0.3
As	10	Cs	<0.06	Ho	<0.06	Ni	<0.9	Se	<1	Tm	<0.08
Au	<0.8	Cu	<0.9	Ir	3	P	<200	Si	<100	U	0.3
B	8	Dy	<0.1	K	30	Pb	0.8	Sm	<0.05	V	<0.9
Ba	2	Er	<0.08	La	0.1	Pd	<0.4	Sn	0.5	W	0.6
Be	<0.7	Eu	<0.09	Mg	6	Pr	1	Sr	5	Y	1
Ca	40	Fe	2	Mn	<2	Pt	<0.6	Ta	<0.04	Yb	<0.6
Cd	<0.5	Ga	<0.6	Mo	<0.6	Rb	0.4	Te	<0.3	Zn	10
Ce	0.3	Gd	0.08	Na	40	Re	<0.1	Th	0.2	Zr	9

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: August 15, 2022

Date of expiration: February 29, 2024

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