



## Certificate of Analysis

## ICP-MS Internal Std Mix

Agilent Part Number: 5188-6525

Lot Number: 52-080CRY2

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	98.8 µg/mL	3106*	Bi	99.99+	Lu	7439-94-3	100 µg/mL	99.5 µg/mL	3130a*	Lu <sub>2</sub> O <sub>3</sub>	99.99+
Ge	7440-56-4	100 µg/mL	99.9 µg/mL	3120a*	GeO <sub>2</sub>	99.99+	Rh	7440-16-6	100 µg/mL	99.1 µg/mL	3144*	Rh(NO <sub>3</sub> ) <sub>3</sub> ·H <sub>2</sub> 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	99.4 µg/mL	3148a*	Sc <sub>2</sub> O <sub>3</sub>	99.99+
Li*	7439-93-2	100 µg/mL	99.6 µg/mL	3129a*	*Li <sub>2</sub> CO <sub>3</sub>	99.99+	Tb	7440-27-9	100 µg/mL	99.8 µg/mL	3157a*	Tb <sub>4</sub> O <sub>7</sub>	99.99+

\* - indicates NIST SRM

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

## Purity grades:

Starting Materials: Shown above

Matrix:

10% HNO<sub>3</sub>: HNO<sub>3</sub> (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: 51-164CR, 51-165CR, 50-025CR.

**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	<0.5	Co	<0.1	Hf	0.3	Nb	<0.3	Ru	<0.9	Ti	<0.8
Al	3	Cr	0.8	Hg	<0.6	Nd	<0.02	Sb	<0.2	Tl	<1
As	10	Cs	<0.08	Ho	<0.01	Ni	0.6	Se	<10	Tm	0.05
Au	<0.2	Cu	<2	Ir	<3	P	<400	Si	300	U	0.02
B	4	Dy	<0.02	K	15	Pb	3	Sm	<0.01	V	<0.3
Ba	1	Er	0.05	La	0.1	Pd	<0.3	Sn	0.8	W	<0.9
Be	<0.6	Eu	0.03	Mg	6	Pr	<0.01	Sr	2	Y	0.9
Ca	90	Fe	5	Mn	0.1	Pt	0.5	Ta	<0.1	Yb	<0.4
Cd	<0.4	Ga	<0.2	Mo	<0.6	Rb	<0.5	Te	<0.8	Zn	2
Ce	0.06	Gd	<0.01	Na	10	Re	<0.02	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 Guide 34 regulations.

Date of release: July 15, 2019

Date of expiration: January 31, 2021

*Brijender S. Tank*  
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