

# Certificate of Analysis

## ICP-MS Internal Std Mix

**Agilent Part Number: 5188-6525**
**Lot Number: 52-081CRY2**

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	99.8 µg/mL	3106*	Bi	99.99+	Lu	7439-94-3	100 µg/mL	100 µg/mL	3130a*	Lu <sub>2</sub> O <sub>3</sub>	99.99+
Ge	7440-56-4	100 µg/mL	100 µg/mL	3120a*	GeO <sub>2</sub>	99.99+	Rh	7440-16-6	100 µg/mL	100 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	100 µg/mL	3124a*	In	99.99+	Sc	7440-20-2	100 µg/mL	99.5 µg/mL	3148a*	Sc <sub>2</sub> O <sub>3</sub>	99.99+
Li*	7439-93-2	100 µg/mL	99.7 µg/mL	3129a*	*Li <sub>2</sub> CO <sub>3</sub>	99.99+	Tb	7440-27-9	100 µg/mL	100 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%:**

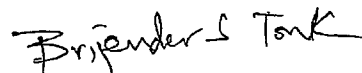
Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.
Ag	<0.7	Co	<0.1	Hf	0.3	Nb	<0.3	Ru	<0.9	Ti	<0.6
Al	3	Cr	0.4	Hg	<0.6	Nd	<0.03	Sb	<0.2	Tl	<0.6
As	10	Cs	<0.08	Ho	<0.01	Ni	0.6	Se	10	Tm	0.05
Au	<0.2	Cu	<2	Ir	<3	P	<400	Si	400	U	<0.01
B	5	Dy	<0.02	K	15	Pb	3	Sm	<0.01	V	<0.2
Ba	1	Er	0.1	La	0.1	Pd	<0.3	Sn	1	W	<0.9
Be	<0.6	Eu	0.02	Mg	6	Pr	<0.01	Sr	3	Y	0.9
Ca	100	Fe	5	Mn	<0.1	Pt	1	Ta	0.2	Yb	0.3
Cd	0.5	Ga	<0.2	Mo	<0.6	Rb	<0.5	Te	<0.8	Zn	5
Ce	0.05	Gd	<0.01	Na	30	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:** August 31, 2019

**Date of expiration:** February 28, 2021


  
 QC Coordinator