

# Certificate of Analysis

## ICP-MS Internal Std Mix

**Agilent Part Number: 5188-6525**
**Lot Number: 51-015CRY2**

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	101 µg/mL	3106*	Bi	99.99+	Lu	7439-94-3	100 µg/mL	101 µg/mL	3130a*	Lu <sub>2</sub> O <sub>3</sub>	99.99+
Ge	7440-56-4	100 µg/mL	101 µg/mL	3120a*	GeO <sub>2</sub>	99.99+	Rh	7440-16-6	100 µg/mL	101 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	101 µg/mL	3124a*	In	99.99+	Sc	7440-20-2	100 µg/mL	101 µg/mL	3148a*	Sc <sub>2</sub> O <sub>3</sub>	99.99+
Li*	7439-93-2	100 µg/mL	101 µg/mL	3129a*	<sup>6</sup> Li <sub>2</sub> CO <sub>3</sub>	99.99+	Tb	7440-27-9	100 µg/mL	102 µg/mL	3157a*	Tb <sub>2</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: 50-024CR, 50-025CR.

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

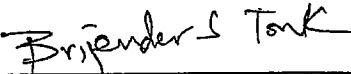
Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.
Ag	<0.09	Co	0.07	Hf	0.01	Nb	0.2	Ru	0.5	Ti	<2
Al	6	Cr	<0.6	Hg	<0.2	Nd	0.06	Sb	0.2	Tl	<0.4
As	<10	Cs	0.06	Ho	0.02	Ni	0.5	Se	10	Tm	0.06
Au	<0.1	Cu	0.7	Ir	<20	P	<300	Si	<100	U	<0.01
B	<20	Dy	0.05	K	2	Pb	3	Sm	0.02	V	<0.03
Ba	1	Er	0.2	La	0.1	Pd	0.2	Sn	0.3	W	<0.2
Be	<0.5	Eu	0.01	Mg	5	Pr	0.02	Sr	4	Y	1
Ca	60	Fe	7	Mn	0.2	Pt	0.2	Ta	<0.05	Yb	0.6
Cd	0.4	Ga	<0.08	Mo	<0.2	Rb	0.5	Te	<0.8	Zn	2
Ce	0.1	Gd	0.09	Na	<6	Re	<0.01	Th	1	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:** February 28, 2019

**Date of expiration:** August 31, 2020


  
 QC Coordinator