



# Certificate of Analysis

## Internal Standard Mix

Agilent Part Number: 5183-4681

Lot Number: 2-12MKBY2

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	10.0 µg/mL	9.94 µg/mL	3106*	Bi	99.99+	Sc	7440-20-2	10.0 µg/mL	10.1 µg/mL	3148a*	Sc(NO <sub>3</sub> ) <sub>3</sub> ·4H <sub>2</sub> O	99.99+
Ge	7440-56-4	10.0 µg/mL	9.92 µg/mL	3120a*	(NH <sub>4</sub> ) <sub>2</sub> GeF <sub>6</sub>	99.99+	Tb	7440-27-9	10.0 µg/mL	10.1 µg/mL	3157a*	Tb <sub>2</sub> O <sub>3</sub>	99.99+
In	7440-74-6	10.0 µg/mL	10.1 µg/mL	3124a*	In	99.99+	Y	7440-65-5	10.0 µg/mL	9.91 µg/mL	3167a*	Y <sub>2</sub> O <sub>3</sub>	99.99+
Li*	7439-93-2	10.0 µg/mL	9.89 µg/mL	3129a*	*Li <sub>2</sub> CO <sub>3</sub>	99.99+							

\* - indicates NIST SRM

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

### Purity grades:

Starting Materials: Shown above

Matrix:

5% 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: CL12-16YP, CL1-46MKB.

### 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	Cr	1	Hg	<0.4	Nb	<0.5	Rh	<0.06	Th	<0.05
Al	2	Cs	<0.01	Ho	0.01	Nd	<0.05	Ru	<0.2	Ti	<0.3
As	<0.9	Cu	0.5	Ir	<0.1	Ni	0.8	Sb	<0.2	Tl	<0.2
Au	<0.3	Dy	<0.03	K	<5	P	<100	Se	<10	Tm	<0.01
B	<0.2	Er	<0.04	La	0.04	Pb	0.1	Si	<200	U	<0.01
Ba	0.2	Eu	<0.01	Lu	<6	Pd	<0.2	Sm	<0.01	V	<0.1
Be	<0.4	Fe	5	Mg	<0.5	Pr	<0.02	Sn	<0.1	W	<0.5
Ca	10	Ga	<0.4	Mn	<0.5	Pt	<0.03	Sr	<0.1	Yb	<0.3
Cd	<0.04	Gd	<0.01	Mo	<0.4	Rb	<0.04	Ta	<0.3	Zn	<0.8
Ce	0.02	Hf	<0.01	Na	3	Re	<0.01	Te	<0.5	Zr	0.4
Co	<0.08										

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: June 15, 2016

Date of expiration: December 31, 2017

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