

# Certificate of Analysis

## ICP-MS Internal Std Mix

**Agilent Part Number: 5188-6525**
**Lot Number: 3-198MKBY2**

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	7440-69-8	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	7440-66-4	100 µg/mL	99.3 µg/mL	3120a*	GeO <sub>2</sub>	99.99+	Rh	7440-16-8	100 µg/mL	99.2 µg/mL	3144*	Rh(NO <sub>3</sub> ) <sub>3</sub> ·H <sub>2</sub> O	99.99+
In	7440-74-8	100 µg/mL	99.7 µg/mL	3124a*	In	99.99+	Sc	7440-20-2	100 µg/mL	99.8 µg/mL	3148a*	Sc <sub>2</sub> O <sub>3</sub>	99.99+
Li*	7439-93-2	100 µg/mL	100 µg/mL	3129a*	*Li <sub>2</sub> CO <sub>3</sub>	99.99+	Tb	7440-27-8	100 µg/mL	99.8 µg/mL	3157a*	Tb <sub>2</sub> O <sub>3</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: 3-189MKB, 3-62MKB, 3-63MKB, 23-79VY.

**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	<2	Co	3	Hf	<0.2	Nb	<0.2	Ru	20	Ti	<2
Al	30	Cr	<6	Hg	<1	Nd	<0.1	Sb	<0.2	Tl	<0.8
As	<2	Ca	<0.3	Ho	<0.05	Ni	<4	Se	<90	Tm	<0.1
Au	<2	Cu	<3	Ir	20	P	<500	Si	<400	U	<0.2
B	10	Dy	3	K	40	Pb	2	Sm	<0.1	V	<1
Ba	2	Er	<0.3	La	<0.4	Pd	<0.3	Sn	<1	W	<1
Be	<1	Eu	<0.1	Mg	5	Pr	<0.04	Sr	7	Y	<0.01
Ce	<100	Fe	<20	Mn	<5	Pt	<0.7	Ta	<0.5	Yb	0.4
Cd	<0.01	Ge	<0.4	Mo	<2	Rb	<0.5	Te	<3	Zn	<6
Ce	0.2	Gd	<0.3	Na	<100	Re	<0.2	Th	2	Zr	4

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: May 15, 2017

Date of expiration: November 30, 2018


  
 QC Coordinator