

# Certificate of Analysis

## ICP-MS Internal Std Mix

**Agilent Part Number: 5188-6525**
**Lot Number: 23-169VYY2**

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	100 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	100 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	100 µg/mL	3124a*	In	99.99+	Sc	7440-20-2	100 µg/mL	100 µg/mL	3148a*	Sc(NO <sub>3</sub> ) <sub>3</sub> ·4H <sub>2</sub> O	99.99+
Li*	7439-93-2	100 µg/mL	101 µg/mL	3129a*	*Li <sub>2</sub> CO <sub>3</sub>	99.99+	Tb	7440-27-9	100 µg/mL	101 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: 23-78VY, 22-205VY.

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

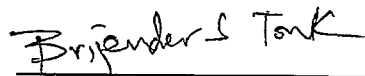
Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.
Ag	<2	Co	0.4	Hf	<0.3	Nb	<4	Ru	<0.8	Ti	<2
Al	10	Cr	4	Hg	<1	Nd	<0.2	Sb	<2	Tl	<3
As	9	Cs	<0.2	Ho	<0.1	Ni	8	Se	<60	Tm	<0.06
Au	<2	Cu	<1	Ir	<2	P	<500	Si	<400	U	<0.04
B	<20	Dy	<0.3	K	<20	Pb	3	Sm	<0.2	V	<0.3
Ba	2	Er	0.7	La	0.4	Pd	<2	Sn	<0.9	W	<9
Be	<3	Eu	<0.07	Mg	5	Pr	0.2	Sr	4	Y	<2
Ca	<100	Fe	10	Mn	1	Pt	<0.3	Ta	<0.4	Yb	3
Cd	<0.4	Ga	<1	Mo	<4	Rb	0.5	Te	<2	Zn	<5
Ce	0.3	Gd	<0.5	Na	200	Re	<0.2	Th	<0.9	Zr	<2

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: September 15, 2016

Date of expiration: March 31, 2018


  
 QC Coordinator