

# Certificate of Analysis

## ICP-MS Internal Std Mix

**Agilent Part Number: 5188-6525**
**Lot Number: 18-75VY**

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 mg/L	101 mg/L	3106*	Bi	99.99+	Lu	7439-94-3	100 mg/L	100 mg/L	3130a*	Lu <sub>2</sub> O <sub>3</sub>	99.99+
Ge	7440-56-4	100 mg/L	99.3 mg/L	3120a	GeO <sub>2</sub>	99.99+	Rh	7440-16-6	100 mg/L	98.2 mg/L	3144*	Rh	99.99+
In	7440-74-6	100 mg/L	99.3 mg/L	3124a*	In	99.99+	Sc	7440-20-2	100 mg/L	98.5 mg/L	3148a*	Sc <sub>2</sub> O <sub>3</sub>	99.99+
Li*	7439-93-2	100 mg/L	100 mg/L	3129a*	*Li <sub>2</sub> CO <sub>3</sub>	99.99+	Tb	7440-27-9	100 mg/L	99.3 mg/L	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. 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: 11-4VY, 15-124VY, 16-160VY, 17-211VY.

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

Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.
Ag	<0.1	Co	<0.6	Hf	0.3	Nb	0.6	Ru	0.2	Ti	<0.5
Al	50	Cr	<2	Hg	<0.4	Nd	0.2	Sb	0.6	Tl	<2
As	<0.7	Cs	<0.06	Ho	0.03	Ni	<30	Se	<2	Tm	0.7
Au	<0.6	Cu	1	Ir	20	P	<200	Si	<200	U	0.03
B	<4	Dy	0.3	K	<300	Pb	4	Sm	<0.05	V	0.1
Ba	100	Er	0.3	La	0.1	Pd	1	Sn	<0.7	W	<0.3
Be	2	Eu	0.2	Mg	20	Pr	0.03	Sr	7	Y	0.6
Ca	70	Fe	20	Mn	<0.3	Pt	0.7	Ta	<0.06	Yb	0.4
Cd	<0.2	Ga	<0.5	Mo	<0.3	Rb	<0.07	Te	10	Zn	20
Ce	0.1	Gd	0.1	Na	1400	Re	<0.04	Th	9	Zr	8

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. 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.

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