



Certificate of Analysis

ICP-MS Internal Std Mix

Agilent Part Number: 5188-6525

Lot Number: 17-211VY

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	99.1 mg/L	3130a*	Lu ₂ O ₃	99.99+
Ge	7440-56-4	100 mg/L	99.5 mg/L	3120a*	GeO ₂	99.99+	Rh	7440-16-6	100 mg/L	99.2 mg/L	3144*	Rh(NO ₃) ₃ ·H ₂ O	99.99+
In	7440-74-6	100 mg/L	99.6 mg/L	3124a*	In	99.99+	Sc	7440-20-2	100 mg/L	100 mg/L	3148a*	Sc ₂ O ₃	99.99+
Li*	7439-93-2	100 mg/L	100 mg/L	3129a*	*Li ₂ CO ₃	99.99+	Tb	7440-27-9	100 mg/L	99.5 mg/L	3157a*	Tb ₄ O ₇	99.99+

* - indicates NIST SRM

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

Purity grades:

Starting Materials: Shown above

Matrix:

10% HNO₃: HNO₃ (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: 16-160VY, 12-82VY, 11-4VY.

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	0.3	Hf	0.2	Nb	0.4	Ru	0.6	Ti	0.5
Al	12	Cr	0.6	Hg	<0.1	Nd	0.2	Sb	20	Tl	0.2
As	2	Cs	<0.01	Ho	<0.01	Ni	2	Se	<5	Tm	0.6
Au	<0.2	Cu	2	Ir	5	P	<100	Si	<100	U	<0.01
B	3	Dy	0.4	K	<20	Pb	3	Sm	0.1	V	0.03
Ba	6	Er	0.3	La	0.1	Pd	0.5	Sn	0.7	W	<0.1
Be	<0.1	Eu	0.1	Mg	3	Pr	<0.1	Sr	7	Y	0.4
Ca	30	Fe	4	Mn	0.2	Pt	4	Ta	<0.01	Yb	0.6
Cd	0.7	Ga	0.5	Mo	<0.1	Rb	<0.1	Te	<0.1	Zn	7
Ce	0.1	Gd	0.1	Na	500	Re	<0.1	Th	9	Zr	6

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.

Date of release: June 15, 2011

Date of expiration: December 31, 2012

QC Coordinator
CertiPrep, Inc.