Agilent Technologies

Certificate of Analysis

ICP-MS Internal Std Mix

Agilent Part Number: 5188-6525 **Lot Number:** 3-63MKBY2

Analyte	CAS#	Labeled Conc.	Measured Conc.	SRM	Start Matl Formula	Start Matl Purity	Analyte	CAS#	Labeled Conc.	Measured Conc.	SRM	Start Matl Formula	Start Matl Purity
Bi	7440-69-9	100 µg/mL	99.2 µg/mL	3106*	Bi	99.99+	Lu	7439-94-3	100 µg/mL	99.6 µg/mL	3130a*	Lu_2O_3	99.99+
Ge	7440-56-4	100 µg/mL	98.7 µg/mL	3120a*	GeO2	99.99+	Rh	7440-16-6	100 µg/mL	99.4 µg/mL	3144*	Rh(NO3)3-H2O	99.99+
In	7440-74-6	100 µg/mL	99.8 µg/mL	3124a*	In	99.99+	Sc	7440-20-2	100 µg/mL	99.7 µg/mL	3148a*	Sc_2O_3	99.99+
Li*	7439-93-2	100 µg/mL	101 µg/mL	3129a*	$^6Li_2CO_3$	99.99+	Tb	7440-27-9	100 µg/mL	99.1 µg/mL	3157a*	Tb_4O_7	99.99+

* - Indicates NIST SRM † - Indicates CRM (when NIST SRM is not available)

Purity grades:

Starting Materials: Shown above

Matrix:

10% HNO_3: HNO_3 (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: 22-51VY,23-79VY,23-78VY,3-62MKB.

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	<1	Co	<0.8	Hf	<0.01	Nb	<1	Ru	5	Tl	<2
Al	2	Cr	<2	Hg	<0.6	Nd	<0.1	Sb	<0.5	Tl	<1
As	6	Cs	<0.3	Ho	<0.03	Ni	4	Se	<50	Tm	<0.03
Au	<2	Cu	3	Ir	60	P	<500	Si	<400	U	<0.04
B	7	Dy	3	K	40	Pb	2	Sm	<0.08	V	<2
Ba	2	Er	<0.1	La	<0.09	Pd	<2	Sn	<2	W	<2
Be	<1	Eu	<0.07	Mg	4	Pr	<0.07	Sr	<10	Y	0.5
Ca	<100	Fe	20	Mn	1	Pt	2	Ta	<0.3	Yb	<0.4
Cd	<0.2	Ga	<0.4	Mo	<2	Rb	<1	Te	<8	Zn	5
Ce	0.3	Gd	<0.2	Na	50	Re	<0.2	Th	2	Zr	3

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: April 15, 2017

Date of expiration: October 31, 2018

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QC Coordinator

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