Agilent Technologies

Certificate of Analysis

ICP-MS Internal Std Mix

Agilent Part Number: 5188-6525 **Lot Number:** 51-164CRY2

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	101 µg/mL	3106*	Bi	99.99+	Lu	7439-94-3	100 µg/mL	100 µg/mL	3130a*	Lu_2O_3	99.99+
Ge	7440-56-4	100 µg/mL	100 µg/mL	3120a*	GeO2	99.99+	Rh	7440-16-6	100 µg/mL	99.3 µg/mL	3144*	Rh(NO3)3-H2O	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_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	100 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: 1-152YJ, 51-165CR, 50-025CR, 50-024CR.

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	<0.03	Co	<0.05	Hf	0.2	Nb	0.2	Ru	0.4	Ti	0.1
Al	3	Cr	<0.2	Hg	<0.1	Nd	<0.02	Sb	<0.2	Tl	<0.2
As	<10	Cs	0.04	Ho	<0.01	Ni	0.5	Se	<5	Tm	0.04
Au	0.03	Cu	0.7	Ir	<1	P	<100	Si	<100	U	<0.01
B	6	Dy	0.02	K	2	Pb	2	Sm	<0.01	V	<0.05
Ba	1	Er	0.1	La	0.1	Pd	<0.1	Sn	<2	W	<0.1
Be	<0.2	Eu	0.03	Mg	5	Pr	<0.01	Sr	<2	Y	0.8
Ca	50	Fe	3	Mn	<0.1	Pt	0.1	Ta	<0.02	Yb	<0.4
Cd	<0.3	Ga	<0.06	Mo	<2	Rb	0.3	Te	<0.3	Zn	2
Ce	0.08	Gd	<0.02	Na	4	Re	<0.01	Th	0.2	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 30, 2019

Date of expiration: October 31, 2020

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QC Coordinator

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