Agilent Technologies

Certificate of Analysis

ICP-MS Internal Std Mix

Agilent Part Number: 5188-6525 **Lot Number:** 54-080CRY2

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	101 µg/mL	3120a*	GeO2	99.99+	Rh	7440-16-6	100 µg/mL	101 µg/mL	3144*	Rh(NO3)3-H2O	99.99+
In	7440-74-6	100 µg/mL	101 µg/mL	3124a*	In	99.99+	Sc	7440-20-2	100 µg/mL	101 µg/mL	3148a*	Sc_2O_3	99.99+
Li^6	7439-93-2	100 µg/mL	100 µg/mL	3129a*	$^6Li_2CO_3$	99.99+	Tb	7440-27-9	100 µg/mL	101 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: 54-079CR, 53-103CR, 53-104CR.

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	<0.8	Co	<0.4	Hf	0.3	Nb	<0.2	Ru	0.3	Ti	0.2
Al	7	Cr	0.3	Hg	<0.3	Nd	0.04	Sb	0.3	Tl	0.4
As	<5	Cs	<0.1	Ho	0.01	Ni	0.7	Se	<5	Tm	0.04
Au	<0.09	Cu	0.9	Ir	9	P	<100	Si	<200	U	<0.01
B	10	Dy	0.08	K	<200	Pb	0.9	Sm	<0.04	V	<0.1
Ba	1	Er	0.08	La	0.08	Pd	0.1	Sn	0.2	W	<0.3
Be	0.1	Eu	0.05	Mg	4	Pr	<0.04	Sr	2	Y	1
Ca	50	Fe	6	Mn	<0.7	Pt	0.1	Ta	0.07	Yb	<0.5
Cd	0.08	Ga	0.1	Mo	<0.1	Rb	<0.2	Te	0.4	Zn	1
Ce	0.1	Gd	0.04	Na	<10	Re	0.08	Th	0.4	Zr	4

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 17034 regulations.

Date of release: April 30, 2020

Date of expiration: October 31, 2021

Brijender S Tonk

QC Coordinator

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