Agilent Technologies

Certificate of Analysis

ICP-MS Internal Std Mix

Agilent Part Number: 5188-6525 **Lot Number:** 21-24VYY2

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	99.9 mg/L	3106*	Bi	99.99+	Lu	7439-94-3	100 mg/L	100 mg/L	3130a*	Lu_2O_3	99.99+
Ge	7440-56-4	100 mg/L	99.2 mg/L	3120a	GeO_2	99.99+	Rh	7440-16-6	100 mg/L	100 mg/L	3144*	$Rh(NO_3)_3$-H_2O	99.99+
In	7440-74-6	100 mg/L	99.5 mg/L	3124a*	In	99.99+	Sc	7440-20-2	100 mg/L	99.1 mg/L	3148a*	$Sc(NO_3)_3$-$4H_2O$	99.99+
Li †	7439-93-2	100 mg/L	100 mg/L	3129a*	†Li_2CO_3	99.99+	Tb	7440-27-9	100 mg/L	98.5 mg/L	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. 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: 14-182VY,20-139VY.

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	<0.3	Co	<3	Hf	<0.2	Nb	<0.9	Ru	<0.9	Ti	<9
Al	20	Cr	<2	Hg	<3	Nd	<0.2	Sb	20	Tl	<8
As	<7	Cs	<0.2	Ho	<0.08	Ni	<3	Se	<30	Tm	0.5
Au	<1	Cu	<2	Ir	5	P	<300	Si	<200	U	<0.07
B	<20	Dy	<0.2	K	<400	Pb	2	Sm	<0.09	V	<4
Ba	<5	Er	<0.5	La	0.2	Pd	<0.3	Sn	<2	W	<10
Be	<3	Eu	<0.2	Mg	<5	Pr	0.03	Sr	<4	Y	<0.9
Ca	<70	Fe	<20	Mn	<0.7	Pt	3	Ta	<0.8	Yb	<2
Cd	<0.5	Ga	<0.2	Mo	<2	Rb	<0.5	Te	<2	Zn	<5
Ce	<0.2	Gd	<0.2	Na	500	Re	<0.4	Th	<5	Zr	5

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.

Brijender S Tonk
QC Coordinator

Date of release: April 30, 2014
Date of expiration: October 31, 2015