

Certificate of Analysis

ICP-MS Stock Tuning Solution (100mL)

Agilent Part Number: 5188-6564
Lot Number: 17-263VY

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
Ce	7440-45-1	10.0 mg/L	9.99 mg/L	3110*	Ce(NO ₃) ₂ · 6H ₂ O	99.99+	Tl	7440-28-0	10.0 mg/L	9.95 mg/L	3158*	TlNO ₃	99.99+
Co	7440-48-4	10.0 mg/L	10.0 mg/L	3113*	Co	99.99+	Y	7440-65-5	10.0 mg/L	9.94 mg/L	3167a*	Y ₂ O ₃	99.99+
Li	7439-93-2	10.0 mg/L	10.0 mg/L	3129a*	Li ₂ CO ₃	99.99+							

* - indicates NIST SRM

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

Purity grades:

Starting Materials: Shown above

Matrix:

 2% 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: 17-150VY, 2-227YP.

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	0.01	Cs	<0.01	Ho	0.01	Nd	0.01	Ru	<0.1	Te	<0.1
Al	0.3	Cu	0.3	In	<0.01	Ni	<0.01	Sb	0.01	Th	0.01
As	<0.01	Dy	<0.01	Ir	<0.01	P	<20	Sc	0.08	Tl	<0.01
Au	<0.01	Er	<0.01	K	<10	Pb	0.07	Se	<1	Tm	0.01
B	<0.1	Eu	<0.01	La	<0.6	Pd	0.08	Si	<20	U	<0.01
Ba	0.06	Fe	<1	Lu	<0.01	Pr	0.1	Sm	<0.01	V	0.05
Be	<0.01	Ga	<0.1	Mg	0.3	Pt	<0.01	Sn	<0.01	W	<0.03
Bi	<0.01	Gd	<0.3	Mn	<0.01	Rb	0.04	Sr	0.06	Yb	<0.01
Ca	<1	Ge	<0.1	Mo	<0.1	Re	0.01	Ta	<0.01	Zn	0.1
Cd	0.03	Hf	<0.01	Na	0.2	Rh	<0.01	Tb	<1	Zr	<0.1
Cr	<0.01	Hg	<0.1	Nb	<0.01						

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: October 15, 2011

Date of expiration: April 30, 2013

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