Agilent Technologies

Certificate of Analysis

7500 Series PA Tuning 1

Agilent Part Number: 5188-6524 **Lot Number:** 58-239CRY2

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
As	7440-38-2	20.0 µg/mL	20.0 µg/mL	3103a*	As	99.99+	In	7440-74-6	5.00 µg/mL	5.01 µg/mL	3124a*	In	99.99+
Be	7440-41-7	20.0 µg/mL	20.0 µg/mL	3105a*	$Be_4O(CH_3COO)_6$	99.99+	Li [6]	7439-93-2	5.00 µg/mL	5.02 µg/mL	3129a*	$^6Li_2CO_3$	99.99+
Cd	7440-43-9	20.0 µg/mL	20.1 µg/mL	3108*	Cd	99.99+	Lu	7439-94-3	5.00 µg/mL	5.06 µg/mL	3130a*	Lu_2O_3	99.99+
Zn	7440-66-6	20.0 µg/mL	19.8 µg/mL	3168a*	Zn	99.99+	Mn	7439-96-5	5.00 µg/mL	5.02 µg/mL	3132*	Mn	99.99+
Mg	7439-95-4	10.0 µg/mL	10.1 µg/mL	3131a*	Mg	99.99+	Na	7440-23-5	5.00 µg/mL	5.02 µg/mL	3152a*	$NaHCO_3$	99.99+
Ni	7440-02-0	10.0 µg/mL	10.1 µg/mL	3136*	Ni	99.99+	Sc	7440-20-2	5.00 µg/mL	5.05 µg/mL	3148a*	Sc_2O_3	99.99+
Pb	7439-92-1	10.0 µg/mL	10.1 µg/mL	3128*	PbO	99.99+	Sr	7440-24-6	5.00 µg/mL	5.03 µg/mL	3153a*	$Sr(NO_3)_2$	99.99+
Al	7429-90-5	5.00 µg/mL	5.04 µg/mL	3101a*	Al	99.99+	Th	7440-29-1	5.00 µg/mL	5.03 µg/mL	3159*	$Th(NO_3)_4 \cdot 4H_2O$	99.99+
Ba	7440-39-3	5.00 µg/mL	5.03 µg/mL	3104a*	$Ba(NO_3)_2$	99.99+	Tl	7440-28-0	5.00 µg/mL	5.03 µg/mL	3158*	$TlNO_3$	99.99+
Bi	7440-69-9	5.00 µg/mL	4.98 µg/mL	3106*	Bi	99.99+	U	7440-61-1	5.00 µg/mL	5.00 µg/mL	3164*	$UO_2(NO_3)_2 \cdot 6H_2O$	99.99+
Co	7440-48-4	5.00 µg/mL	5.01 µg/mL	3113*	Co	99.99+	V	7440-62-2	5.00 µg/mL	4.98 µg/mL	3165*	NH_4VO_3	99.99+
Cr	7440-47-3	5.00 µg/mL	5.02 µg/mL	3112a*	$Cr(NO_3)_3 \cdot 9H_2O$	99.99+	Y	7440-65-5	2.50 µg/mL	2.53 µg/mL	3167a*	Y_2O_3	99.99+
Cu	7440-50-8	5.00 µg/mL	5.04 µg/mL	3114*	Cu	99.99+	Yb	7440-64-4	2.50 µg/mL	2.53 µg/mL	3166a*	Yb_2O_3	99.99+

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

Purity grades:

Starting Materials: Shown above

Matrix:

5% 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: 57-159CR, 3-28MJ.

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	<0.05	Er	<0.02	Hg	<0.4	Nd	<0.05	Rh	0.5	Ta	<0.03
Au	<0.07	Eu	<0.5	Ho	<0.03	P	<100	Ru	<0.4	Tb	<0.02
B	<5	Fe	<5	Ir	0.3	Pd	<50	Sb	0.2	Te	<0.4
Ca	<30	Ga	<0.2	K	<100	Pr	<0.01	Se	<3	Ti	<0.01
Ce	0.1	Gd	0.07	La	0.05	Pt	<0.06	Si	<100	Tm	<0.02
Cs	<0.02	Ge	<0.01	Mo	<0.2	Rb	<0.3	Sm	0.09	W	<0.08
Dy	<0.01	Hf	<0.03	Nb	<0.02	Re	<0.03	Sn	<0.3	Zr	<0.3

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 17034 regulations.

Date of release: July 15, 2022

Date of expiration: January 31, 2024

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QC Coordinator

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