

# Certificate of Analysis

## 7500 Series PA Tuning 1

**Agilent Part Number: 5188-6524**
**Lot Number: 59-110CRY2**

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	20.1 µg/mL	3103a*	As	99.99+	In	7440-74-6	5.00 µg/mL	5.04 µg/mL	3124a*	In	99.99+
Be	7440-41-7	20.0 µg/mL	20.1 µg/mL	3105a*	Be <sub>2</sub> O(CH <sub>3</sub> COO) <sub>6</sub>	99.99+	Li <sup>6</sup>	7439-93-2	5.00 µg/mL	5.02 µg/mL	3129a*	<sup>6</sup> Li <sub>2</sub> CO <sub>3</sub>	99.99+
Cd	7440-43-9	20.0 µg/mL	19.8 µg/mL	3108*	Cd	99.99+	Lu	7439-94-3	5.00 µg/mL	5.03 µg/mL	3130a*	Lu <sub>2</sub> O <sub>3</sub>	99.99+
Zn	7440-66-6	20.0 µg/mL	20.0 µg/mL	3168a*	Zn	99.99+	Mn	7439-96-5	5.00 µg/mL	5.01 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	4.95 µg/mL	3152a*	NaHCO <sub>3</sub>	99.99+
Ni	7440-02-0	10.0 µg/mL	9.99 µg/mL	3136*	Ni	99.99+	Sc	7440-20-2	5.00 µg/mL	5.04 µg/mL	3148a*	Sc <sub>2</sub> O <sub>3</sub>	99.99+
Pb	7439-92-1	10.0 µg/mL	9.91 µg/mL	3128*	PbO	99.99+	Sr	7440-24-6	5.00 µg/mL	5.02 µg/mL	3153a*	Sr(NO <sub>3</sub> ) <sub>2</sub>	99.99+
Al	7429-90-5	5.00 µg/mL	5.03 µg/mL	3101a*	Al	99.99+	Th	7440-29-1	5.00 µg/mL	4.97 µg/mL	3159*	Th(NO <sub>3</sub> ) <sub>4</sub> · 4H <sub>2</sub> O	99.99+
Ba	7440-39-3	5.00 µg/mL	5.00 µg/mL	3104a*	Ba(NO <sub>3</sub> ) <sub>2</sub>	99.99+	Tl	7440-28-0	5.00 µg/mL	4.95 µg/mL	3158*	TlNO <sub>3</sub>	99.99+
Bi	7440-69-9	5.00 µg/mL	4.93 µg/mL	3106*	Bi	99.99+	U	7440-61-1	5.00 µg/mL	4.97 µg/mL	3164*	UO <sub>2</sub> (NO <sub>3</sub> ) <sub>2</sub> · 6H <sub>2</sub> O	99.99+
Co	7440-48-4	5.00 µg/mL	5.06 µg/mL	3113*	Co	99.99+	V	7440-62-2	5.00 µg/mL	5.00 µg/mL	3165*	NH <sub>4</sub> VO <sub>3</sub>	99.99+
Cr	7440-47-3	5.00 µg/mL	4.99 µg/mL	3112a*	Cr(NO <sub>3</sub> ) <sub>3</sub> · 9H <sub>2</sub> O	99.99+	Y	7440-65-5	2.50 µg/mL	2.51 µg/mL	3167a*	Y <sub>2</sub> O <sub>3</sub>	99.99+
Cu	7440-50-8	5.00 µg/mL	5.03 µg/mL	3114*	Cu	99.99+	Yb	7440-64-4	2.50 µg/mL	2.54 µg/mL	3166a*	Yb <sub>2</sub> O <sub>3</sub>	99.99+

\* - indicates NIST SRM

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

**Purity grades:**

Starting Materials: Shown above

Matrix:

 5% HNO<sub>3</sub>: HNO<sub>3</sub> (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: 56-080CR, 59-064CR, 59-115CR.

**Trace Metallic Impurities in the Actual Solution, in µg/L, via Agilent ICP-MS Analysis, results are accurate to ±10%:**

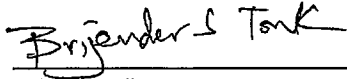
Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.	Element	Conc.
Ag	0.2	Er	<0.05	Hg	<0.02	Nd	<0.01	Rh	0.4	Ta	<0.01
Au	<0.04	Eu	<0.3	Ho	<0.01	P	<100	Ru	0.2	Tb	<0.01
B	0.4	Fe	0.7	Ir	0.2	Pd	<50	Sb	<0.03	Te	0.7
Ca	<40	Ga	0.06	K	<100	Pr	<0.01	Se	<3	Ti	<0.01
Ce	0.1	Gd	0.03	La	0.05	Pt	<0.04	Si	<100	Tm	<0.01
Cs	0.04	Ge	<0.03	Mo	<0.1	Rb	0.3	Sm	0.04	W	<0.05
Dy	<0.01	Hf	<0.6	Nb	<0.01	Re	<0.01	Sn	<0.2	Zr	0.1

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: December 31, 2022

Date of expiration: June 30, 2024

  
 QC Coordinator