

Certificate of Analysis

Detection Limit (1)

Agilent Part Number: ZHP-20-100

Lot Number: 23-101GSY2

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
Be	7440-41-7	1.00 µg/L	1.01 µg/L	3105a*	Be ₂ O(CH ₃ COO) ₂	99.99+	In	7440-74-6	1.00 µg/L	0.995 µg/L	3124a*	In	99.99+
Bi	7440-69-9	1.00 µg/L	0.991 µg/L	3108*	Bi	99.99+							

* - Indicates NIST SRM

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

Purity grades:

Starting Materials: Shown above

Matrix:

2wt% HNO₃: HNO₃ (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: all 8; 20-49GS.

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	<0.01	Ce	<0.01	Ho	<0.01	Nd	<0.01	Sb	<0.01	Ti	<0.01
Al	<0.03	Cu	<0.01	Ir	<0.01	Ni	<0.01	Sc	<0.01	Tl	<0.01
As	<0.01	Dy	<0.01	K	<0.1	P	<10	Se	<0.01	Tm	<0.01
Au	<0.01	Er	<0.01	La	<0.01	Pb	<0.01	Si	<5	U	<0.01
B	<0.01	Eu	<0.01	Li	<0.01	Pd	<0.01	Sm	<0.01	V	<0.01
Ba	<0.01	Fe	<0.1	Lu	<0.01	Pr	<0.01	Sn	<0.01	W	<0.01
Ca	<0.1	Ga	<0.01	Mg	<0.01	Pt	<0.01	Sr	<0.01	Y	<0.01
Cd	<0.01	Gd	<0.01	Mn	<0.01	Pb	<0.01	Ta	<0.01	Yb	<0.01
Ce	<0.01	Ge	<0.01	Mo	<0.01	Re	<0.01	Tb	<0.01	Zn	<0.03
Co	<0.01	Hf	<0.01	Na	<0.03	Rh	<0.01	Te	<0.01	Zr	<0.01
Cr	<0.01	Hg	<0.01	Nb	<0.01	Ru	<0.01	Th	<0.01		

Balances are calibrated regularly with weight sets traceable to NIST.

Agilent reference standards are guaranteed stable and accurate to ±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 Guide 34 regulations.

Date of release: January 31, 2017

Date of expiration: April 30, 2018

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