

Certificate of Analysis

ICP-MS Internal Std Mix

Agilent Part Number: 5188-6525
Lot Number: 23-78VYY2

| 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 | 7440-89-9 | 100 µg/mL | 99.4 µg/mL | 3106* | Bi | 99.99+ | Lu | 7439-94-3 | 100 µg/mL | 98.8 µg/mL | 3130a* | Lu ₂ O ₃ | 99.99+ |
| Ge | 7440-56-4 | 100 µg/mL | 100 µg/mL | 3120a | GeO ₂ | 99.99+ | Pb | 7440-16-6 | 100 µg/mL | 101 µg/mL | 3144* | Rh(NO ₃) ₃ ·H ₂ O | 99.99+ |
| In | 7440-74-6 | 100 µg/mL | 99.4 µg/mL | 3124a* | In | 99.99+ | Sc | 7440-20-2 | 100 µg/mL | 99.9 µg/mL | 3148a* | Sc(NO ₃) ₃ ·4H ₂ O | 99.99+ |
| Li* | 7439-93-2 | 100 µg/mL | 99.7 µg/mL | 3129a* | ⁶ Li ₂ CO ₃ | 99.99+ | Tb | 7440-27-9 | 100 µg/mL | 101 µg/mL | 3157a* | Tb ₂ O ₃ | 99.99+ |

* - Indicates NIST SRM

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

Purity grades:

Starting Materials: Shown above

Matrix:

 10% 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: 21-24VY, 21-167VY.

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

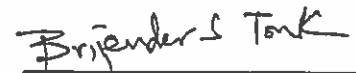
| Element | Conc. | Element | Conc. | Element | Conc. | Element | Conc. | Element | Conc. | Element | Conc. |
|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|
| Ag | <1 | Co | <3 | Hf | <0.2 | Nb | <2 | Ru | <2 | Ti | <2 |
| Al | 4 | Cr | 3 | Hg | <1 | Nd | <0.5 | Sb | <2 | Tl | <5 |
| As | <20 | Cs | <0.1 | Ho | <0.2 | Ni | <9 | Se | <100 | Tm | <0.2 |
| Au | <0.9 | Cu | 2 | Ir | <2 | P | <200 | Si | <400 | U | <0.05 |
| B | <4 | Dy | <0.2 | K | 15 | Pb | 2 | Sm | <0.1 | V | <0.8 |
| Ba | 3 | Er | 0.8 | La | 0.4 | Pd | <2 | Sn | <0.4 | W | <10 |
| Be | <1 | Eu | <0.1 | Mg | <0.9 | Pr | 0.2 | Sr | <1 | Y | 1 |
| Ca | 40 | Fe | 6 | Mn | <5 | Pt | <1 | Ta | <0.5 | Yb | 3 |
| Cd | <0.3 | Ga | <1 | Mo | <4 | Rb | <0.3 | Tc | <4 | Zn | 8 |
| Ce | 0.3 | Gd | <0.2 | Na | 170 | Re | <0.8 | Th | <0.8 | Zr | <2 |

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 Guide 34 regulations.

Date of release: April 30, 2016

Date of expiration: October 31, 2017



 QC Coordinator