# CERTIFICATE OF ANALYSIS

**Agilent Product Name:** Cesium Ionization Buffer: 10% (100,000 µg/mL) Cs in 5% $HNO_3$

**Agilent Part No:** 5190-9421

**Lot No:** 0010885906

## Product Specifications

| Analyte | Starting Material | CAS # | Matrix | Certified Concentration |
|---|---|---|---|---|
| Cs | $Cs_2CO_3$ | 534-17-8 | 5% $HNO_3$ | 99,900 ± 1000 µg/mL (w/v) |

**Intended Use**: This solution is intended for use as an ionization buffer for atomic spectroscopic techniques (flame AAS or ICP-AES).

**Certification & Traceability**: This solution was manufactured under a quality management system that is accredited to **ISO/IEC 17025**, and registered to **ISO 9001**. This solution was prepared to a nominal concentration of 100,000 µg/mL by gravimetric methods using high purity cesium carbonate ($Cs_2CO_3$) dissolved in high purity nitric acid ($HNO_3$) and diluted with ASTM Type I Water. The balances used in the preparation of this solution are calibrated regularly with traceability to NIST. All volumetric dilutions are performed in Class A calibrated glassware. The certified concentration was determined based upon gravimetric procedures. Secondary verification of the certified concentration was performed using ICP-OES that was calibrated and/or referenced against NIST SRM 3111a. The uncertainty associated with the certified concentration represents the expanded uncertainty at the 95% confidence level using a coverage factor of k=2.

**Instructions for Use**: Agilent recommends that the solution be thoroughly mixed by repeated shaking or swirling of the bottle immediately prior to use. To achieve the highest accuracy the analyst should: (1) use only pre-cleaned containers and transferware, (2) avoid pipetting directly from the standard's original container, (3) use a minimum sub-sample size of 500 µL, (4) make dilutions using calibrated balances or certified volumetric class A flasks and pipettes, (5) dilute to volume using the same matrix as the original standard or other chemically appropriate matrix, and (6) never pour used product back into the original container. The solution should be kept tightly capped. Store at controlled room temperature per USP 35 (10.30.60). Do not freeze, heat, or expose to direct sunlight.

**Period of Validity**: Agilent ensures the accuracy of this solution until the expiration date shown below, provided the instructions for use are followed. During the period of validity, the purchaser will be notified if this product is recalled due to any significant changes in the stability of the solution.

**Sample lot approver:**



Chuck Goudreau, Certifying Officer

**Date of release:** 12 August 2020

**Date of expiration:** 31 May 2023

**Hazard Information:** Refer to the Safety Data Sheet (SDS), which can be obtained at www.agilent.com/chem/sds.

**Homogeneity:** This solution was determined to be homogeneous by procedures consistent with the requirements of ISO 17034 and ISO Guide 35. Replicate samples of the finished solution were analyzed to confirm its homogeneity, in accordance with QSP 6-13 Assessment of Homogeneity and Stability. To ensure homogeneity, users should not take a smaller sub-sample than specified in the Instructions for Use, as doing so will invalidate the certified values and uncertainties.

**Further Information:** Please contact Agilent for further information about this CRM.

**Quality Certifications:** This CRM was prepared under a quality management system that is:

- Registered to ISO 9001 – Quality Management Systems – Requirements (TUV NORD Cert. Reg. No. 44 100 16560231)
- Accredited to ISO 17034– General Requirements for the Competence of Reference Material Producers (A2LA Cert. No. 2848.02)
    - ISO 17034 references additional requirements specified in ISO Guide 31 and ISO Guide 35.
- Accredited to ISO/IEC 17025 – General Requirements for the Competence of Testing and Calibration Laboratories (A2LA Cert. No. 2848.01)
- LGC Standards, 276 Abby Road, Manchester, NH 03103