

Certificate of Analysis

Secondary Reference Standard NIST traceable

Multielement Standard Solution 100 mg/L (in 5% HNO₃)

Molecular Formula: NA	Lot No.: M-004.13
Molecular Weight: NA	Cat No.: NIST -086
Packing : 100 mL	Dt. of Issue of Certificate: 31/08/2026
CAS No.: NA	Dt. of Mfr: August 2026
Description: ICP Multielement Standard Solution	Exp. Dt.: July 2028

TABLE :1 Certified Value

Name of elements/ Symbol	Certified Value as mass concentration	Expanded Uncertainty (K=2) as mass concentration	Traceable to NIST SRM
Arsenic (As)	100.07(mg/l)	± 4	3103a
Iron(Fe)	100.13(mg/l)	± 5	3126a
Nickel(Ni)	99.89(mg/l)	± 4	3136
Magnesium(Mg)	99.92(mg/l)	± 6	3131a
Zinc(Zn)	99.61(mg/l)	± 5	3168a
Aluminium(Al)	99.85(mg/l)	± 7	3101a
Cadmium(cd)	99.94(mg/l)	± 4	3108
Molybdenum(Mo)	99.91(mg/l)	± 5	3134
Selenium(Se)	99.80(mg/l)	± 6	3149
Titanium(Ti)	99.97 (mg/l)	± 7	3162a
Calcium(Ca)	99.65(mg/l)	± 5	3109a
Potassium(K)	99.85(mg/l)	± 6	3141a
Lithium(Li)	99.52(mg/l)	± 4	3129a
Manganese(Mn)	99.92(mg/l)	± 5	3132
Vanadium(V)	99.98(mg/l)	± 4	3165
Cobalt(Co)	99.82(mg/l)	±6	3113
Antimony(Sb)	99.22(mg/l)	±5	3102a
Barium(Ba)	99.82(mg/l)	±6	3104a
Boron(B)	99.82(mg/l)	±5	3107
Copper(Cu)	99.82(mg/l)	±6	3114
Lead(Pb)	99.94(mg/l)	±7	3128

Certification process in Detail: ICP Multi element standards are prepared gravimetrically from high purity raw materials in either high purity acids or high purity bases and diluted with filtered (0.22µm), high purity water. All balances are regularly calibrated with analytical weight sets traceable to primary weight by PTB. The density of each batch is measured in g/cm³ at 25°C and is used to calculate the concentration in mg/l. Characterization of ICP multi element standards is carried out by the accredited quality control (QC)SRDLAB Derabassi, According to ISO/IEC17025 by Inductively coupled plasma optical emission spectroscopy (ICP-OES).

Density: The density of the standard solution is **1.0368 g/cm³ at 25°C**

Metrological traceability: This reference material has been measured applying high precision ICP-OES and is traceable to the corresponding NIST SRM as mentioned on **Table 1**.

Intended use: This reference material is intended for use as Calibration Standard for atomic spectrometry, Spectrophotometry and other analytical techniques. Shake well before use and never pipette directly from the original container.

Precautions:

- i) Excess sample must be rejected and must not be put back into the original bottle.
- ii) Gloves, masks, goggles and other general precautionary measure should be used while handling the reference material.

Accreditation: Sabiha Research And Development ltd. is accredited to ISO/IEC 17025:2017.

Do not freeze, store the bottle tightly closed between 15 - 25°C at room temperature protected from light, keep container tightly closed.

Do not put back unused solution into original bottle. For laboratory and industrial use only, not for Human/Animal consumption.

QC Supervisor

Sign_____

