



Certificate of Analysis

Secondary Certified Reference Standard NIST traceable

Copper Standard Solution 1000 mg/L (in 5% HNO₃)

Molecular Formula:	NA	Lot No.:	C-008
Molecular Weight:	NA	Cat No.:	NIST-027
Packing :	100 mL	Dt. of Issue of Certificate:	18/02/2026
CAS No.:	NA	Dt. of Mfg:	Jan 2026
Traceability:	To NIST SRM 3114	Exp. Dt.:	Dec 2027

TABLE :1 Certified Value

Measurand / Constituent	Certified Value	Expanded Uncertainty (K=2)
Copper mass fraction (mg/kg)	1011	± 9
Copper Concentration (mg/L)	1000	± 9

- This Copper Standard Solution is prepared by using ISO 17034:2016 certified RM & comparing with Copper Standard solution of NIST SRM 3114.
- The Copper Standard Solution is prepared gravimetrically using ISO 17034:2016 CRM Copper starting material, whose purity is determined by primary method. The Copper Standard Solution is prepared in 0.16 mol/L nitric acid. One unit of this Reference Material consists of 100 ml Copper Standard Solution packed in tightly sealed white HDPE bottles. Certified value of Copper Standard Solution along with the associated uncertainty was calculated at 95% confidence level with coverage factor $k=2$, considering major sources of uncertainty including measurement replication, instrument background, buoyancy correction.

Traceability: The test result is traceable to Standard Reference Material of National Institute of Standards and Technology (USA), SRM 3114.

Intended use: This reference material is intended to be used as a standard for AAS/ICP-OES & ICP-MS quantitative determination of Copper and calibration of instruments.

Precautions:

- The sampling should be done using clean and dry pipette/micropipette.
- Excess sample must be rejected and must not be put back into the original bottle.
- 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 17025:2017.

Expiry: The validity of the standard is 2 years from date of manufacturing, However once the bottle is opened the expiry shall be one year from date of opening but within overall shelf life of the standard.

Do not freeze, store the bottle tightly closed between 5 - 30°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

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